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<151> 2002-10-22

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21
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22

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24

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ttatcgagca aatgtgattc gcttcttcta aaatcaaagc atgatgttga tggtgtgaag    3060

tgtccagttt ccttttata caatgtgaga tatatgaaaa tcgctggttt tctactcagc    3120

aacctcgaaa ggaacataag ctaattgagg gcaacagttt actgtcggaa gaaggaaact    3180

atgacatgat tatggttcct agacattctc aatttcgttt attatctccc atttgtgagg    3240

ggattggggt tagaatcaca gaataagatc caagaaaaga aaaatgaaag tttgtttcca    3300

gtcacatttt aaagaggctg ttatccttga taacatcctt taaaaaatgt ttacttcagt    3360

ctgttggtga gttgagttgt gcatgccttt gttgtatata agctaagttc taatgaccca    3420

catgtcaaaa atcgtatctc tatctttttt tatatttatt ttctactgtg taaatttatt    3480

cttttgtaga atcatggttg tgtcgttttc tctaatgtga taacttacca gtgacttcta    3540

aacctccttt cggagatcat ataggatgtg aaattcagaa acttcactga aatcaagaaa    3600

taatgataaa ggcagactga acaattataa atagacagtg ccacaatcag cttagctatc    3660

agcctctgag ctatcaagga aaggtgtccc cattggacgg acatagcctt atgagcttat    3720

ggtttgggaa aaagtggggt cacattttcg ccctgatgat cctcttgagt accttattca    3780
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gggcccttat gtagggtctt tatgcaggga atgacttata tgactatatt ggacactaaa      3840

tagggatacc tatgaccaga cttcatccct aatgatcata ttatagaatc tctacaccat      3900

ggttgttaga ggataaaatt gtaatctaaa ccatgtaggg aagactgtga atgtgggaaa      3960

gatatacact gccacttctc aaatacccag agcctttgaa aagaggaaat cagagtagga      4020

ttacttttcc agagtgtata tatggcaaac gagttaggtc tttaaaagac aactgcatgg      4080

tacgtcattg ttgcaactgc tacattctgg tcctacttgt ttgtattctt aaaacatgtc      4140

aaatattgaa gagtgtatag tgacaagggg gagcagctac tgggaagagt gaactgtcgt      4200

gtgatattgt tgtttgtagg taataatata tatccaactc tgattgttcc gagtcctaga      4260

gcatctatcc tgtttctcac cgcttgagtg gtgtctcaag cccaggatgt ttattaggaa      4320

catttcaaga tcctttcctt aggtctttca ctaagctccc ttgcatatat ttcaagtaga      4380

tgttgtatcc cagactaacc acagtagtaa cgtctgtttc tctgtgtgct cgttggtctt      4440

tgcaaaattt cttctccaaa ttatttaatt attttgtatt tatatgttac aattgacaaa      4500

aatgataaaa tcaataaaat aaatttgcac                                       4530
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<210>   30
<211>   1017
<212>   PRT
<213>   Homo sapiens

<400>   30

Met Val Phe Ser Val Arg Gln Cys Gly His Val Gly Arg Thr Glu Glu
1   5   10   15

Val Leu Leu Thr Phe Lys Ile Phe Leu Val Ile Ile Cys Leu His Val
            20   25   30

Val Leu Val Thr Ser Leu Glu Glu Asp Thr Asp Asn Ser Ser Leu Ser
        35   40   45

Pro Pro Pro Ala Lys Leu Ser Val Val Ser Phe Ala Pro Ser Ser Asn
    50   55   60

Gly Thr Pro Glu Val Glu Thr Thr Ser Leu Asn Asp Val Thr Leu Ser
65   70   75   80

Leu Leu Pro Ser Asn Glu Thr Glu Lys Thr Lys Ile Thr Ile Val Lys
                85   90   95
```

44

Thr Phe Asn Ala Ser Gly Val Lys Pro Gln Arg Asn Ile Cys Asn Leu
            100                 105                 110

Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe Arg Gly Glu Ile Met Phe
            115                 120                 125

Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln Asn Gln His Ile Thr Asn
            130                 135                 140

Gly Thr Leu Thr Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu
145                 150                 155                 160

Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Met Cys
                165                 170                 175

Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn Cys Thr Phe Thr Ile Lys
            180                 185                 190

Leu Asn Asn Thr Met Asn Ala Cys Ala Ala Ile Ala Ala Leu Glu Arg
            195                 200                 205

Val Lys Ile Arg Pro Met Glu His Cys Cys Cys Ser Val Arg Ile Pro
    210                 215                 220

Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys Leu Gln Cys Asp Leu Gln
225                 230                 235                 240

Asp Pro Ile Val Cys Leu Ala Asp His Pro Arg Gly Pro Pro Phe Ser
                245                 250                 255

Ser Ser Gln Ser Ile Pro Val Val Pro Arg Ala Thr Val Leu Ser Gln
            260                 265                 270

Val Pro Lys Ala Thr Ser Phe Ala Glu Pro Pro Asp Tyr Ser Pro Val
    275                 280                 285

Thr His Asn Val Pro Ser Pro Ile Gly Glu Ile Gln Pro Leu Ser Pro
    290                 295                 300

Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro Ala Ile Asp Met Pro Pro
305                 310                 315                 320

45

Gln Ser Glu Thr Ile Ser Ser Pro Met Pro Gln Thr His Val Ser Gly
              325             330                   335

Thr Pro Pro Pro Val Lys Ala Ser Phe Ser Ser Pro Thr Val Ser Ala
          340             345             350

Pro Ala Asn Val Asn Thr Thr Ser Ala Pro Pro Val Gln Thr Asp Ile
          355             360             365

Val Asn Thr Ser Ser Ile Ser Asp Leu Glu Asn Gln Val Leu Gln Met
    370             375             380

Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu
385             390             395             400

Met Ile Asn Gln Val Ser Arg Leu Leu His Ser Pro Pro Asp Met Leu
          405             410             415

Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Asp Ile Gly Leu
          420             425             430

Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu
          435             440             445

Ala Leu Ala Val Ile Arg Val Asn Ala Ser Ser Phe Asn Thr Thr Thr
    450             455             460

Phe Val Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Thr Gln
465             470             475             480

Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr Leu Pro Ser Ser Leu Met
          485             490             495

Asn Asn Leu Pro Ala His Asp Met Glu Leu Ala Ser Arg Val Gln Phe
          500             505             510

Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn
    515             520             525

Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Ala Asn Leu Thr
    530             535             540

Val Arg Asn Leu Thr Arg Asn Val Thr Val Thr Leu Lys His Ile Asn

Pro Ser Gln Asp Glu Leu Thr Val Arg Cys Val Phe Trp Asp Leu Gly
            565                 570                 575

Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp Asn Gly Cys Ser Val Lys
            580                 585                 590

Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser
            595                 600                 605

Phe Gly Val Leu Leu Asp Leu Ser Arg Thr Ser Val Leu Pro Ala Gln
    610                 615                 620

Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser
625                 630                 635                     640

Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile
            645                 650                 655

Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu
            660                 665                 670

Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr
            675                 680                 685

Lys Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe
    690                 695                 700

Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr
705                 710                 715                     720

Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu
            725                 730                 735

Lys Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val Thr Ile
            · 740                745                 750

Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys
            755                 760                 765

Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala
    770                 775                 780

Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu
785            790            795            800

Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys
            805            810            815

Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu
        820            825            830

Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe
        835            840            845

Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe
    850            855            860

Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys
865            870            875            880

Val Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys
            885            890            895

Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr
        900            905            910

Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser
        915            920            925

Asn Ser Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu
    930            935            940

Val Asn Asn Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser
945            950            955            960

Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys
            965            970            975   ·

Leu His Asp Phe Thr Gly Lys Gln His Met Phe Asn Glu Lys Glu Asp
        980            985            990

Ser Cys Asn Gly Lys Gly Arg Met  Ala Leu Arg Arg Thr  Ser Lys Arg
    995            1000            1005

```
Gly Ser  Leu His Phe Ile Glu  Gln Met
    1010                  1015


<210>  31
<211>  1009
<212>  PRT
<213>  Mus musculus

<400>  31

Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg Pro Glu Glu
1                5                10                  15


Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys Phe His Val
            20                  25                  30


Ile Leu Val Thr Ser Leu Lys Glu Asn Gly Asn Ser Ser Leu Leu Ser
            35                  40                  45


Pro Ser Ala Glu Ser Ser Leu Val Ser Leu Ile Pro Tyr Ser Asn Gly
    50                  55                  60


Thr Pro Asp Ala Ala Ser Glu Val Leu Ser Thr Leu Asn Lys Thr Glu
65                  70                  75                  80


Lys Ser Lys Ile Thr Ile Val Lys Thr Phe Asn Ala Ser Gly Val Lys
            85                  90                  95


Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Leu Cys Asn Asp Ser Val
            100                 105                 110


Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp Glu Asp His Asn Val
            115                 120                 125


Thr Gln Asn Gln Asp Thr Ala Asn Gly Thr Phe Ala Gly Val Leu Ser
    130                 135                 140


Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu
145                 150                 155                 160


Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala Glu Ala Gln Ser Thr
                165                 170                 175


Val Asn Cys Thr Phe Thr Val Lys Leu Asn Glu Thr Met Asn Val Cys
```

49

```
            180                   185                   190

Ala Met Met Val Thr Phe Gln Thr Val Gln Ile Arg Pro Met Glu Gln
    195                   200                   205

Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser Ser Pro Glu Glu Leu
    210                   215                   220

Glu Lys Leu Gln Cys Glu Leu Gln Asp Pro Ile Val Cys Leu Ala Asp
225                   230                   235                   240

Gln Pro His Gly Pro Pro Leu Ser Ser Ser Ser Lys Pro Val Val Pro
                  245                   250                   255

Gln Ala Thr Ile Ile Ser His Val Ala Ser Asp Phe Ser Leu Ala Glu
                  260                   265                   270

Pro Leu Asp His Ala Leu Met Thr Pro Ser Thr Pro Ser Leu Thr Gln
              275                   280                   285

Glu Ser Asn Leu Pro Ser Pro Gln Pro Thr Ile Pro Leu Ala Ser Ser
    290                   295                   300

Pro Ala Thr Asp Leu Pro Val Gln Ser Val Val Val Ser Ser Leu Pro
305                   310                   315                   320

Gln Thr Asp Leu Ser His Thr Leu Ser Pro Val Gln Ser Ser Ile Pro
                  325                   330                   335

Ser Pro Thr Thr Pro Ala Pro Ser Val Pro Thr Glu Leu Val Thr Ile
              340                   345                   350

Ser Thr Pro Pro Gly Glu Thr Val Val Asn Thr Ser Thr Val Ser Asp
              355                   360                   365

Leu Glu Ala Gln Val Ser Gln Met Glu Lys Ala Leu Ser Leu Gly Ser
    370              .    375                   380

Leu Glu Pro Asn Leu Ala Gly Glu Met Val Asn Arg Val Ser Lys Leu
385                   390                   395                   400

Leu His Ser Pro Pro Ala Leu Leu Ala Pro Leu Ala Gln Arg Leu Leu
                  405                   410                   415
```

50

```
Lys Val Val Asp Ala Ile Gly Leu Gln Leu Asn Phe Ser Ser Thr Thr
            420             425             430

Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn
        435             440             445

Ala Ser Asn Phe Asn Thr Thr Thr Phe Ala Ala Gln Asp Pro Thr Asn
    450             455             460

Leu Gln Val Ser Leu Glu Thr Pro Pro Glu Asn Ser Ile Gly Ala
465             470             475             480

Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala Asn Asp Val
            485             490             495

Glu Leu Ala Ser Arg Ile Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu
        500             505             510

Phe Gln Asp Pro Ser Leu Glu Asn Leu Thr Leu Ile Ser Tyr Val Ile
        515             520             525

Ser Ser Ser Val Thr Asn Met Thr Ile Lys Asn Leu Thr Arg Asn Val
    530             535             540

Thr Val Ala Leu Lys His Ile Asn Pro Ser Pro Asp Asp Leu Thr Val
545             550             555             560

Lys Cys Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Lys Gly Gly Trp
            565             570             575

Ser Ser Asp Gly Cys Ser Val Lys Asp Lys Arg Met Asn Glu Thr Ile
            580             585             590

Cys Thr Cys Ser His Leu Thr Ser Phe Gly Ile Leu Leu Asp Leu Ser
        595             600             605

Arg Thr Ser Leu Pro Pro Ser Gln Met Met Ala Leu Thr Phe Ile Thr
    610             615             620

Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val
625             630             635             640
```

```
Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile
            645             650             655

Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Ile Phe Leu
            660             665             670

Leu Asp Ser Trp Ile Ala Leu Tyr Asn Thr Arg Gly Phe Cys Ile Ala
            675             680             685

Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met
    690             695             700

Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn
705             710             715             720

Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly
            725             730             735

Ile Pro Ala Val Val Val Ser Ile Val Leu Thr Ile Ser Pro Asp Asn
            740             745             750

Tyr Gly Ile Gly Ser Tyr Gly Lys Phe Pro Asn Gly Thr Pro Asp Asp
            755             760             765

Phe Cys Trp Ile Asn Ser Asn Val Val Phe Tyr Ile Thr Val Val Gly
    770             775             780

Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val
785             790             795             800

Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Gln Leu Gly Ala Gln
            805             810             815

Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe
            820             825             830

Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val
            835             840             845

Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly
    850             855             860
```

52

Phe Phe Ile Phe Ile Phe Tyr Cys Ala Ala Lys Glu Asn Val Arg Lys
865   870   875   880

Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn
              885   890   895

Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val
          900   905   910

Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Cys Asn
        915   920   925

Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Ser Asp Cys Ser Val His
    930   935   940

Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe
945   950   955   960

Ser Val Gln Asn Gly Asp Val Cys Leu His Asp Leu Thr Gly Lys Gln
            965   970   975

His Met Phe Ser Asp Lys Glu Asp Ser Cys Asn Gly Lys Ser Arg Ile
        980   985   990

Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu His Phe Ile Glu Gln
        995   1000   1005

Met

<210>   32
<211>   1013
<212>   PRT
<213>   Rattus norvegicus

<400>   32

Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg Pro Glu Glu
1   5   10   15

Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys Phe His Ala
            20   25   30

Ile Leu Val Thr Ser Leu Lys Glu Asn Ala Gly Asn Ser Ser Leu Leu
        35   40   45

53

Ser Pro Ser Ala Glu Ser Ser Leu Val Ser Leu Val Pro Tyr Ser Asn
    50   55   60

Gly Thr Pro Asp Ala Ala Ser Glu Val Leu Ser Thr Leu Asn Arg Thr
65   70   75   80

Glu Lys Ser Lys Ile Thr Ile Leu Lys Thr Phe Asn Ala Ser Gly Val
            85   90   95

Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Ser Asp Ser
        100   105   110

Val Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp Asp His Tyr Asn
        115   120   125

Val Thr Gln Asn Gln Asp Ile Val Asn Ser Thr Phe Ala Gly Val Leu
    130   135   140

Ser Leu Ser Glu Leu Lys Arg Thr Glu Leu Asn Lys Thr Leu Gln Thr
145   150   155   160

Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala Glu Ala Gln Asn
            165   170   175

Thr Leu Asn Cys Thr Phe Thr Val Lys Leu Asn Glu Thr Met Asn Val
            180   185   190

Cys Ala Met Met Val Thr Phe Lys Ser Val Gln Ile Arg Pro Met Glu
        195   200   205

Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser Ser Pro Glu Glu
    210   215   220

Leu Glu Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu Ala
225   230   235   240

Asp Gln Pro His Gly Pro Pro Val Ser Ser Ser Ser Lys Pro Val Pro
            245   250   255

Val Val Pro Gln Ala Thr Ile Phe Ser His Val Ala Ser Asp Phe Ser
        260   265   270

```
Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Ser Ser Thr Pro Ser
        275             280             285

Leu Ala Gln Glu Thr Arg Leu Pro Ser Pro Gln Pro Thr Ile Ser Leu
        290             295             300

Thr Ser Ser Pro Ala Ile Asp Leu Pro Val Gln His Val Val Ala Ser
305             310             315             320

Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu Ser Pro Val Gln
            325             330             335

Ser Ser Ile Pro Ser Pro Thr Thr Ala Ala Pro Ser Val Pro Glu Lys
            340             345             350

Val Val Ala Ile Ser Thr Pro Pro Gly Glu Thr Val Val Asn Thr Ser
        355             360             365

Ser Val Pro Asp Leu Glu Ala Gln Val Ser Gln Met Glu Lys Ala Leu
    370             375             380

Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met Val Asn Arg
385             390             395             400

Val Ser Lys Leu Leu His Ser Pro Leu Ala Leu Leu Ala Pro Leu Ala
            405             410             415

Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu Gln Leu Asn Phe
            420             425             430

Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val
            435             440             445

Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr Phe Ala Ala Gln
    450             455             460

Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Ala Gln Ala Pro Lys Asn
465             470             475             480

Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met Ser Asn Leu Pro
            485             490             495
```

Ala Ser Glu Val Glu Leu Ala Ser Arg Val Gln Phe Asn Phe Phe Glu
            500   505   510

Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile
            515   520   525

Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr Ile Lys Asn Leu
    530   535   540

Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn Pro Ser Gln Asp
545   550   555   560

Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Asn Arg Asn Gly Gly
            565   570   575

Arg Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys Glu Lys Arg Met
            580   585   590

Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe Gly Ile Leu
            595   600   605

Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln Met Met Ala Leu
            610   615   620

Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser
625   630   635   640

Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr
            645   650   655

Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn
            660   665   670

Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Asn Ala Arg Gly
            675   680   685

Phe Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser
    690   695   700

Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val
705   710   715   720

Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile

```
                725                      730                      735

Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile Val Leu Thr Ile
             740                 745                 750

Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys Phe Pro Asn Gly
         755                 760                 765

Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Ser Val Val Phe Tyr Ile
     770             775                 780

Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met
785             790                 795                     800

Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln
             805             810                 815

Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala
         820             825                 830

Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala
         835             840                 845

Trp Gly Pro Val Asn Leu Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn
     850             855                 860

Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Ala Ala Lys Glu
865             870                 875                     880

Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg
             885             890                 895

Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys
         900             905                 910

Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu Gln
         915             920                 925

Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Ser Asp
     930             935                 940

Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn
945             950                 955                     960
```

57

```
Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu His Asp Leu
            965             970             975

Thr Gly Lys Gln His Met Phe Ser Asp Lys Glu Asp Ser Cys Asn Gly
            980             985             990

Lys Ser Arg Met Ala Leu Arg Arg  Thr Ser Lys Arg Gly  Ser Leu His
        995             1000             1005

Phe Ile  Glu Gln Met
    1010
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<210>   33
<211>   4612
<212>   DNA
<213>   Homo sapiens

<400>   33

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gagggggaaaa ggcgggccgg acggcgccag cagccagccc gaggacgcga gcggcaggtg   120

tgcacagagg ttctccactt tgttttctga actcgcggtc aggatggttt tctctgtcag   180

gcagtgtggc catgttggca gaactgaaga agtttttactg acgttcaaga tattccttgt   240

catcatttgt cttcatgtcg ttctggtaac atccctggaa gaagatactg ataattccag   300

tttgtcacca ccacctgcta aattatctgt tgtcagtttt gcccctcct ccaatggtac   360

tccagaggtt gaaacaacaa gcctcaatga tgttacttta agcttactcc cttcaaacga   420

aacagaaaaa actaaaatca ctatagtaaa aaccttcaat gcttcaggcg tcaaaccccca   480

gagaaatatc tgcaatttgt catctatttg caatgactca gcatttttta gaggtgagat   540

catgtttcaa tatgataaag aaagcactgt tccccagaat caacatataa cgaatggcac   600

cttaactgga gtcctgtctc taagtgaatt aaaacgctca gagctcaaca aaaccctgca   660

aaccctaagt gagacttact ttataatgtg tgctacagca gaggcccaaa gcacattaaa   720

ttgtacattc acaataaaac tgaataatac aatgaatgca tgtgctgcaa tagccgcttt   780

ggaaagagta aagattcgac caatggaaca ctgctgctgt tctgtcagga taccctgccc   840

ttcctcccca gaagagttgg gaaagcttca gtgtgacctg caggatccca ttgtctgtct   900

tgctgaccat ccacgtggcc caccattttc ttccagccaa tccatcccag tggtgcctcg   960

ggccactgtg ctttcccagg tccccaaagc tacctctttt gctgagcctc cagattattc  1020
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acctgtgacc cacaatgttc cctctccaat aggggagatt caaccccttt caccccagcc   1080

ttcagctccc atagcttcca gccctgccat tgacatgccc ccacagtctg aaacgatctc   1140

ttcccctatg ccccaaaccc atgtctccgg caccccacct cctgtgaaag cctcattttc   1200

ctctcccacc gtgtctgccc ctgcgaatgt caacactacc agcgcacctc ctgtccagac   1260

agacatcgtc aacaccagca gtatttctga tcttgagaac caagtgttgc agatggagaa   1320

ggctctgtcc ttgggcagcc tggagcctaa cctcgcagga gaaatgatca accaagtcag   1380

cagactcctt cattccccgc ctgacatgct ggccćctctg gctcaaagat tgctgaaagt   1440

agtggatgac attggcctac agctgaactt ttcaaacacg actataagtc taacctcccc   1500

ttctttggct ctggctgtga tcagagtgaa tgccagtagt ttcaacacaa ctacctttgt   1560

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tggcacaatt actcttcctt catcgctgat gaataattta ccagctcatg acatggagct   1680

agcttccagg gttcagttca attttttttga aacacctgct ttgtttcagg atccttccct   1740

ggagaacctc tctctgatca gctacgtcat atcatcgagt gttgcaaacc tgaccgtcag   1800

gaacttgaca agaaacgtga cagtcacatt aaagcacatc aacccgagcc aggatgagtt   1860

aacagtgaga tgtgtatttt gggacttggg cagaaatggt ggcagaggag ctggtcaga   1920

caatggctgc tctgtcaaag acaggagatt gaatgaaacc atctgtacct gtagccatct   1980

aacaagcttc ggcgttctgc tggacctatc taggacatct gtgctgcctg ctcaaatgat   2040

ggctctgacg ttcattacat atattggttg tgggctttca tcaatttttc tgtcagtgac   2100

tcttgtaacc tacatagctt ttgaaaagat ccggagggat tacccttcca aaatcctcat   2160

ccagctgtgt gctgctctgc ttctgctgaa cctggtcttc ctcctggact cgtggattgc   2220

tctgtataag atgcaaggcc tctgcatctc agtggctgta tttcttcatt attttctctt   2280

ggtctcattc acatggatgg gcctagaagc attccatatg tacctggccc ttgtcaaagt   2340

atttaatact tacatccgaa aatacatcct taaattctgc attgtcggtt gggggggtacc   2400

agctgtggtt gtgaccatca tcctgactat atccccagat aactatgggc ttggatccta   2460

tgggaaattc cccaatggtt caccggatga cttctgctgg atcaacaaca atgcagtatt   2520

ctacattacg gtggtgggat atttctgtgt gatatttttg ctgaacgtca gcatgttcat   2580

tgtggtcctg gttcagctct gtcgaattaa aaagaagaag caactgggag cccagcgaaa   2640

aaccagtatt caagacctca ggagtatcgc tggccttaca tttttactgg gaataacttg   2700
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gggctttgcc ttctttgcct ggggaccagt taacgtgacc ttcatgtatc tgtttgccat    2760

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caggaagcaa tggaggcggt atctttgttg tggaaagtta cggctggctg aaaattctgg    2880

aaatgcttct acagagagga atggggtctc ttttagtgtt cagaatggag atgtgtgcct    2940

tcacgatttc actggaaaac agcacatgtt taacgagaag gaagattcct gcaatgggaa    3000

aggccgtatg gctctcagaa ggacttcaaa gcggggaagc ttacacttta ttgagcaaat    3060

gtgattcctt tcttctaaaa tcaaagcatg atgcttgaca gtgtgaaatg tccaatttta    3120

ccttttacac aatgtgagat gtatgaaaat caactcattt tattctcggc aacatctgga    3180

gaagcataag ctaattaagg gcgatgatta ttattacaag aagaaaccaa gacattacac    3240

catggttttt agacatttct gatttggttt cttatctttc attttataag aaggttggtt    3300

ttaaacaata cactaagaat gactcctata aagaaacaa aaaaaggtag tgaactttca     3360

gctacctttt aaagaggcta agttatcttt gataacatca tataaagcaa ctgttgactt    3420

cagcctgttg gtgagtttag ttgtgcatgc ctttgttgta tataagctaa attctagtga    3480

cccatgtgtc aaaaatctta cttctacatt tttttgtatt tattttctac tgtgtaaatg    3540

tattcctttg tagaatcatg gttgttttgt ctcacgtgat aattcagaaa atccttgctc    3600

gttccgcaaa tcctaaagct ccttttggag atgatatagg atgtgaaata cagaaacctc    3660

agtgaaatca agaaataatg atcccagcca gactgagaaa atgtaagcag acagtgccac    3720

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ctcttgggtg cacgacctgt acagccaaac acagcatcca atatgaatac ccatcccctg    3900

accgcatccc cagtagtcag attatagaat ctgcaccaag atgtttagct ttataccttg    3960

gccacagaga gggatgaact gtcatccaga ccatgtgtca ggaaaattgt gaacgtagat    4020

gaggtacata cactgccgct tctcaaatcc ccagagcctt taggaacagg agagtagact    4080

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aaaggcaact gcatggtaca ttgttgattg ttatgactgg tacactctgg cccagccaga    4200

gctataattg ttttttaaat gtgtcttgaa gaatgcacag tgacaagggg agtagctatt    4260

gggaacaggg aactgtccta cactgctatt gttgctacat gtatcgagcc ttgattgctc    4320

ctagttatat acagggtcta tcttgcttcc tacctacatc tgcttgagca gtgcctcaag    4380

tacatcctta ttaggaacat ttcaaacccc ttttagttaa gtctttcact aaggttctct    4440
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tgcatatatt tcaagtgaat gttggatctc agactaacca tagtaataat acacatttct   4500

gtgagtgctg acttgtcttt gcaatatttc ttttctgatt tatttaattt tcttgtattt   4560

atatgttaaa atcaaaaatg ttaaaatcaa tgaaataaat ttgcagttaa ga           4612
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<210> 34
<211> 966
<212> PRT
<213> Homo sapiens

<400> 34

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Met Val Phe Ser Val Arg Gln Cys Gly His Val Gly Arg Thr Glu Glu
1               5                   10                  15


Val Leu Leu Thr Phe Lys Ile Phe Leu Val Ile Ile Cys Leu His Val
            20                  25                  30


Val Leu Val Thr Ser Leu Glu Glu Asp Thr Asp Asn Ser Ser Leu Ser
            35                  40                  45


Pro Pro Pro Ala Lys Leu Ser Val Val Ser Phe Ala Pro Ser Ser Asn
        50                  55                  60


Gly Thr Pro Glu Val Glu Thr Thr Ser Leu Asn Asp Val Thr Leu Ser
65                  70                  75                  80


Leu Leu Pro Ser Asn Glu Thr Glu Lys Thr Lys Ile Thr Ile Val Lys
                85                  90                  95


Thr Phe Asn Ala Ser Gly Val Lys Pro Gln Arg Asn Ile Cys Asn Leu
            100                 105                 110


Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe Arg Gly Glu Ile Met Phe
            115                 120                 125


Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln Asn Gln His Ile Thr Asn
    130                 135                 140


Gly Thr Leu Thr Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu
145                 150                 155                 160


Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Met Cys
                165                 170                 175
```

61

```
Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn Cys Thr Phe Thr Ile Lys
        180             185                 190

Leu Asn Asn Thr Met Asn Ala Cys Ala Ala Ile Ala Ala Leu Glu Arg
        195             200             205

Val Lys Ile Arg Pro Met Glu His Cys Cys Cys Ser Val Arg Ile Pro
    210             215             220

Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys Leu Gln Cys Asp Leu Gln
225             230             235             240

Asp Pro Ile Val Cys Leu Ala Asp His Pro Arg Gly Pro Pro Phe Ser
            245             250             255

Ser Ser Gln Ser Ile Pro Val Val Pro Arg Ala Thr Val Leu Ser Gln
        260             265             270

Val Pro Lys Ala Thr Ser Phe Ala Glu Pro Pro Asp Tyr Ser Pro Val
    275             280             285

Thr His Asn Val Pro Ser Pro Ile Gly Glu Ile Gln Pro Leu Ser Pro
290             295             300

Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro Ala Ile Asp Met Pro Pro
305             310             315             320

Gln Ser Glu Thr Ile Ser Ser Pro Met Pro Gln Thr His Val Ser Gly
            325             330             335

Thr Pro Pro Pro Val Lys Ala Ser Phe Ser Ser Pro Thr Val Ser Ala
        340             345             350

Pro Ala Asn Val Asn Thr Thr Ser Ala Pro Pro Val Gln Thr Asp Ile
        355             360             365

Val Asn Thr Ser Ser Ile Ser Asp Leu Glu Asn Gln Val Leu Gln Met
    370             375             380

Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu
385             390             395             400
```

62

```
Met Ile Asn Gln Val Ser Arg Leu Leu His Ser Pro Pro Asp Met Leu
            405                 410                 415

Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Asp Ile Gly Leu
            420                 425                 430

Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu
            435                 440                 445

Ala Leu Ala Val Ile Arg Val Asn Ala Ser Ser Phe Asn Thr Thr Thr
    450                 455                 460

Phe Val Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Thr Gln
465                 470                 475                 480

Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr Leu Pro Ser Ser Leu Met
            485                 490                 495

Asn Asn Leu Pro Ala His Asp Met Glu Leu Ala Ser Arg Val Gln Phe
            500                 505                 510

Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn
        515                 520                 525

Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Ala Asn Leu Thr
    530                 535                 540

Val Arg Asn Leu Thr Arg Asn Val Thr Val Thr Leu Lys His Ile Asn
545                 550                 555                 560

Pro Ser Gln Asp Glu Leu Thr Val Arg Cys Val Phe Trp Asp Leu Gly
            565                 570                 575

Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp Asn Gly Cys Ser Val Lys
            580                 585                 590

Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser
        595                 600                 605

Phe Gly Val Leu Leu Asp Leu Ser Arg Thr Ser Val Leu Pro Ala Gln
    610                 615                 620
```

Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser
625   630   635   640

Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile
                645   650   655

Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu
            660   665   670

Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr
            675   680   685

Lys Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe
    690   695   700

Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr
705   710   715   720

Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu
            725   730   735

Lys Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val Thr Ile
            740   745   750

Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys
            755   760   765

Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala
    770   775   780

Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu
785   790   795   800

Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys
                805   810   815

Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu
        820   825   830

Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe
        835   840   845

Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe

```
        850                    855                    860

Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys
865                 870                 875                 880

Val Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys
                885                 890                 895

Gly Lys Leu Arg Leu Ala Glu Asn Ser Gly Asn Ala Ser Thr Glu Arg
            900                 905                 910

Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu His Asp
        915                 920                 925

Phe Thr Gly Lys Gln His Met Phe Asn Glu Lys Glu Asp Ser Cys Asn
    930                 935                 940

Gly Lys Gly Arg Met Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu
945                 950                 955                 960

His Phe Ile Glu Gln Met
                965
```

<210> 35
<211> 1020
<212> PRT
<213> Homo sapiens

<400> 35

```
Gly Ser Gly Gly Gly Gly Ala Glu Ala Ala Gly Gly Gly Arg Arg Ala
1               5                   10                  15

Ala Ala Pro Glu Arg Gly Lys Gly Gly Pro Asp Gly Ala Ser Ser Gln
            20                  25                  30

Pro Glu Asp Ala Ser Gly Arg Cys Ala Gln Arg Phe Ser Thr Leu Phe
            35                  40                  45

Ser Glu Leu Ala Val Arg Met Val Phe Ser Val Arg Gln Cys Gly His
        50                  55                  60

Val Gly Arg Thr Glu Glu Val Leu Leu Thr Phe Lys Ile Phe Leu Val
65                  70                  75                  80
```

```
Ile Ile Cys Leu His Val Val Leu Val Thr Ser Leu Glu Glu Asp Thr
                85              90                  95

Asp Asn Ser Ser Leu Ser Pro Pro Pro Ala Lys Leu Ser Val Val Ser
            100             105             110

Phe Ala Pro Ser Ser Asn Gly Thr Pro Glu Val Glu Thr Thr Ser Leu
        115             120             125

Asn Asp Val Thr Leu Ser Leu Leu Pro Ser Asn Glu Thr Glu Lys Thr
    130             135             140

Lys Ile Thr Ile Val Lys Thr Phe Asn Ala Ser Gly Val Lys Pro Gln
145             150             155                 160

Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe
            165             170             175

Arg Gly Glu Ile Met Phe Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln
            180             185             190

Asn Gln His Ile Thr Asn Gly Thr Leu Thr Gly Val Leu Ser Leu Ser
        195             200             205

Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu
    210             215             220

Thr Tyr Phe Ile Met Cys Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn
225             230             235             240

Cys Thr Phe Thr Ile Lys Leu Asn Asn Thr Met Asn Ala Cys Ala Ala
            245             250             255

Ile Ala Ala Leu Glu Arg Val Lys Ile Arg Pro Met Glu His Cys Cys
            260             265             270

Cys Ser Val Arg Ile Pro Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys
        275             280             285

Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu Ala Asp His Pro
    290             295             300
```

Arg Gly Pro Pro Phe Ser Ser Ser Gln Ser Ile Pro Val Val Pro Arg
305   310   315   320

Ala Thr Val Leu Ser Gln Val Pro Lys Ala Thr Ser Phe Ala Glu Pro
                325   330   335

Pro Asp Tyr Ser Pro Val Thr His Asn Val Pro Ser Pro Ile Gly Glu
            340   345   350

Ile Gln Pro Leu Ser Pro Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro
        355   360   365

Ala Ile Asp Met Pro Pro Gln Ser Glu Thr Ile Ser Ser Pro Met Pro
    370   375   380

Gln Thr His Val Ser Gly Thr Pro Pro Pro Val Lys Ala Ser Phe Ser
385   390   395   400

Ser Pro Thr Val Ser Ala Pro Ala Asn Val Asn Thr Thr Ser Ala Pro
            405   410   415

Pro Val Gln Thr Asp Ile Val Asn Thr Ser Ser Ile Ser Asp Leu Glu
            420   425   430

Asn Gln Val Leu Gln Met Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu
        435   440   445

Pro Asn Leu Ala Gly Glu Met Ile Asn Gln Val Ser Arg Leu Leu His
    450   455   460

Ser Pro Pro Asp Met Leu Ala Pro Leu Ala Gln Arg Leu Leu Lys Val
465   470   475   480

Val Asp Asp Ile Gly Leu Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser
            485   490   495

Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn Ala Ser
            500   505   510

Ser Phe Asn Thr Thr Thr Phe Val Ala Gln Asp Pro Ala Asn Leu Gln
        515   520   525

Val Ser Leu Glu Thr Gln Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr

```
                530                    535                    540

Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala His Asp Met Glu Leu
545                 550                 555                 560

Ala Ser Arg Val Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln
                565                 570                 575

Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser
                580                 585                 590

Ser Val Ala Asn Leu Thr Val Arg Asn Leu Thr Arg Asn Val Thr Val
            595                 600                 605

Thr Leu Lys His Ile Asn Pro Ser Gln Asp Glu Leu Thr Val Arg Cys
    610                 615                 620

Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp
625                 630                 635                 640

Asn Gly Cys Ser Val Lys Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr
                645                 650                 655

Cys Ser His Leu Thr Ser Phe Gly Val Leu Leu Asp Leu Ser Arg Thr
            660                 665                 670

Ser Val Leu Pro Ala Gln Met Met Ala Leu Thr Phe Ile Thr Tyr Ile
    675                 680                 685

Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val Thr Tyr
    690                 695                 700

Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile
705                 710                 715                 720

Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Val Phe Leu Leu Asp
            725                 730                 735

Ser Trp Ile Ala Leu Tyr Lys Met Gln Gly Leu Cys Ile Ser Val Ala
        740                 745                 750

Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met Gly Leu
    755                 760                 765
```

68

Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn Thr Tyr
770   775   780

Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Val Pro
785   790   795   800

Ala Val Val Val Thr Ile Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly
                805   810   815

Leu Gly Ser Tyr Gly Lys Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys
                820   825   830

Trp Ile Asn Asn Asn Ala Val Phe Tyr Ile Thr Val Val Gly Tyr Phe
                835   840   845

Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val Leu Val
                850   855   860

Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys
865   870   875   880

Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu
                885   890   895

Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val Asn Val
                900   905   910

Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe
                915   920   925

Ile Phe Ile Phe Tyr Cys Val Ala Lys Glu Asn Val Arg Lys Gln Trp
                930   935   940

Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn Ser Gly
945   950   955   960

Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly
                965   970   975

Asp Val Cys Leu His Asp Phe Thr Gly Lys Gln His Met Phe Asn Glu
                980   985   990

Lys Glu Asp Ser Cys Asn Gly Lys Gly Arg Met Ala Leu Arg Arg Thr
        995   1000   1005

Ser Lys Arg Gly Ser Leu His Phe Ile Glu Gln Met
    1010   1015   1020

<210>   36
<211>   1033
<212>   PRT
<213>   Homo sapiens

<400>   36

Gly Ser Gly Gly Gly Gly Ala Glu Ala Ala Gly Gly Gly Arg Arg Ala
1   5   10   15

Ala Ala Pro Glu Arg Gly Lys Gly Gly Pro Asp Gly Ala Ser Ser Gln
        20   25   30

Pro Glu Asp Ala Ser Gly Arg Cys Ala Gln Arg Phe Ser Thr Leu Phe
        35   40   45

Ser Glu Leu Ala Val Arg Met Val Phe Ser Val Arg Gln Cys Gly His
    50   55   60

Val Gly Arg Thr Glu Glu Val Leu Leu Thr Phe Lys Ile Phe Leu Val
65   70   75   80

Ile Ile Cys Leu His Val Val Leu Val Thr Ser Leu Glu Glu Asp Thr
            85   90   95

Asp Asn Ser Ser Leu Ser Pro Pro Asp Val Thr Leu Ser Leu Leu
            100   105   110

Pro Ser Asn Glu Thr Gly Val Lys Pro Gln Arg Asn Ile Cys Asn Leu
        115   120   125

Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe Arg Gly Glu Ile Met Phe
    130   135   140

Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln Asn Gln His Ile Thr Asn
145   150   155   160

Gly Thr Leu Thr Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu

Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Met Cys
            180   185   190

Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn Cys Thr Phe Thr Ile Lys
            195   200   205

Leu Asn Asn Thr Met Asn Ala Cys Ala Ala Ile Ala Ala Leu Glu Arg
    210   215   220

Val Lys Ile Arg Pro Met Glu His Cys Cys Cys Ser Val Arg Ile Pro
225   230   235   240

Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys Leu Gln Cys Asp Leu Gln
                245   250   255

Asp Pro Ile Val Cys Leu Ala Asp His Pro Arg Gly Pro Pro Phe Ser
            260   265   270

Ser Ser Gln Ser Ile Pro Val Val Pro Arg Ala Thr Val Leu Ser Gln
        275   280   285

Val Pro Lys Ala Thr Ser Phe Ala Glu Pro Pro Asp Tyr Ser Pro Val
    290   295   300

Thr His Asn Val Pro Ser Pro Ile Gly Glu Ile Gln Pro Leu Ser Pro
305   310   315   320

Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro Ala Ile Asp Met Pro Pro
                325   330   335

Gln Ser Glu Thr Ile Ser Ser Pro Met Pro Gln Thr His Val Ser Gly
            340   345   350

Thr Pro Pro Pro Val Lys Ala Ser Phe Ser Ser Pro Thr Val Ser Ala
        355   360   365

Pro Ala Asn Val Asn Thr Thr Ser Ala Pro Pro Val Gln Thr Asp Ile
    370   375   380

Val Asn Thr Ser Ser Ile Ser Asp Leu Glu Asn Gln Val Leu Gln Met
385   390   395   400

71

Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu
                405   410   415

Met Ile Asn Gln Val Ser Arg Leu Leu His Ser Pro Pro Asp Met Leu
            420   425   430

Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Asp Ile Gly Leu
        435   440   445

Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu
    450   455   460

Ala Leu Ala Val Ile Arg Val Asn Ala Ser Ser Phe Asn Thr Thr Thr
465   470   475   480

Phe Val Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Thr Gln
            485   490   495

Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr Leu Pro Ser Ser Leu Met
        500   505   510

Asn Asn Leu Pro Ala His Asp Met Glu Leu Ala Ser Arg Val Gln Phe
        515   520   525

Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn
    530   535   540

Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Ala Asn Leu Thr
545   550   555   560

Val Arg Asn Leu Thr Arg Asn Val Thr Val Thr Leu Lys His Ile Asn
            565   570   575

Pro Ser Gln Asp Glu Leu Thr Val Arg Cys Val Phe Trp Asp Leu Gly
        580   585   590

Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp Asn Gly Cys Ser Val Lys
        595   600   605

Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser
    610   615   620

72

```
Phe Gly Val Leu Leu Asp Leu Ser Arg Thr Ser Val Leu Pro Ala Gln
625             630             635             640

Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser
              645             650             655

Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile
          660             665             670

Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu
          675             680             685

Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr
    690             695             700

Lys Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe
705             710             715             720

Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr
          725             730             735

Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu
          740             745             750

Lys Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val Thr Ile
          755             760             765

Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys
    770             775             780

Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala
785             790             795             800

Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu
              805             810             815

Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys
          820             825             830

Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu
    835             840             845
```

```
Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe
    850             855             860

Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe
865             870             875             880

Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys
            885             890             895

Val Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys
        900             905             910

Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr
        915             920             925

Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser
    930             935             940

Asn Ser Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu
945             950             955             960

Val Asn Asn Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser
            965             970             975

Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys
            980             985             990

Leu His Asp Phe Thr Gly Lys Gln  His Met Phe Asn Glu  Lys Glu Asp
        995             1000            1005

Ser Cys  Asn Gly Lys Gly Arg  Met Ala Leu Arg Arg  Thr Ser Lys
    1010            1015            1020

Arg Gly  Ser Leu His Phe Ile  Glu Gln Met
    1025            1030

<210>   37
<211>   979
<212>   PRT
<213>   Homo sapiens

<400>   37

Met Val Phe Ser Val Arg Gln Cys Gly His Val Gly Arg Thr Glu Glu
1               5               10              15
```

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Val Leu Leu Thr Phe Lys Ile Phe Leu Val Ile Ile Cys Leu His Val
            20              25                  30

Val Leu Val Thr Ser Leu Glu Glu Asp Thr Asp Asn Ser Ser Leu Ser
            35              40              45

Pro Pro Pro Asp Val Thr Leu Ser Leu Leu Pro Ser Asn Glu Thr Gly
    50              55              60

Val Lys Pro Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Asn Asp
65              70              75              80

Ser Ala Phe Phe Arg Gly Glu Ile Met Phe Gln Tyr Asp Lys Glu Ser
            85              90              95

Thr Val Pro Gln Asn Gln His Ile Thr Asn Gly Thr Leu Thr Gly Val
            100             105             110

Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln
    115             120             125

Thr Leu Ser Glu Thr Tyr Phe Ile Met Cys Ala Thr Ala Glu Ala Gln
    130             135             140

Ser Thr Leu Asn Cys Thr Phe Thr Ile Lys Leu Asn Asn Thr Met Asn
145             150             155             160

Ala Cys Ala Ala Ile Ala Ala Leu Glu Arg Val Lys Ile Arg Pro Met
            165             170             175

Glu His Cys Cys Cys Ser Val Arg Ile Pro Cys Pro Ser Ser Pro Glu
            180             185             190

Glu Leu Gly Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu
    195             200             205

Ala Asp His Pro Arg Gly Pro Pro Phe Ser Ser Ser Gln Ser Ile Pro
    210             215             220

Val Val Pro Arg Ala Thr Val Leu Ser Gln Val Pro Lys Ala Thr Ser
225             230             235             240
```

Phe Ala Glu Pro Pro Asp Tyr Ser Pro Val Thr His Asn Val Pro Ser
              245   250   255

Pro Ile Gly Glu Ile Gln Pro Leu Ser Pro Gln Pro Ser Ala Pro Ile
              260   265   270

Ala Ser Ser Pro Ala Ile Asp Met Pro Pro Gln Ser Glu Thr Ile Ser
              275   280   285

Ser Pro Met Pro Gln Thr His Val Ser Gly Thr Pro Pro Pro Val Lys
              290   295   300

Ala Ser Phe Ser Ser Pro Thr Val Ser Ala Pro Ala Asn Val Asn Thr
305   310   315   320

Thr Ser Ala Pro Pro Val Gln Thr Asp Ile Val Asn Thr Ser Ser Ile
              325   330   335

Ser Asp Leu Glu Asn Gln Val Leu Gln Met Glu Lys Ala Leu Ser Leu
              340   345   350

Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met Ile Asn Gln Val Ser
              355   360   365

Arg Leu Leu His Ser Pro Pro Asp Met Leu Ala Pro Leu Ala Gln Arg
              370   375   380

Leu Leu Lys Val Val Asp Asp Ile Gly Leu Gln Leu Asn Phe Ser Asn
385   390   395   400

Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg
              405   410   415

Val Asn Ala Ser Ser Phe Asn Thr Thr Thr Phe Val Ala Gln Asp Pro
              420   425   430

Ala Asn Leu Gln Val Ser Leu Glu Thr Gln Ala Pro Glu Asn Ser Ile
              435   440   445

Gly Thr Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala His
              450   455   460

Asp Met Glu Leu Ala Ser Arg Val Gln Phe Asn Phe Phe Glu Thr Pro
465   470   475   480

Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile Ser Tyr
            485   490   495

Val Ile Ser Ser Ser Val Ala Asn Leu Thr Val Arg Asn Leu Thr Arg
        500   505   510

Asn Val Thr Val Thr Leu Lys His Ile Asn Pro Ser Gln Asp Glu Leu
        515   520   525

Thr Val Arg Cys Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Arg Gly
    530   535   540

Gly Trp Ser Asp Asn Gly Cys Ser Val Lys Asp Arg Arg Leu Asn Glu
545   550   555   560

Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe Gly Val Leu Leu Asp
        565   570   575

Leu Ser Arg Thr Ser Val Leu Pro Ala Gln Met Met Ala Leu Thr Phe
        580   585   590

Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr
        595   600   605

Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser
    610   615   620

Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Val
625   630   635   640

Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Lys Met Gln Gly Leu Cys
            645   650   655

Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr
        660   665   670

Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val
        675   680   685

Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly

Trp Gly Val Pro Ala Val Val Val Thr Ile Ile Leu Thr Ile Ser Pro
705   710   715   720

Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys Phe Pro Asn Gly Ser Pro
                725   730   735

Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala Val Phe Tyr Ile Thr Val
            740   745   750

Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile
        755   760   765

Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln Leu Gly
    770   775   780

Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu
785   790   795   800

Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly
            805   810   815

Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu
        820   825   830

Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Val Ala Lys Glu Asn Val
        835   840   845

Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala
    850   855   860

Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln
865   870   875   880

Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser
            885   890   895

Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Asn Asp Cys Ser
        900   905   910

Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn Gly Val
    915   920   925

78

Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu His Asp Phe Thr Gly
    930 ,   935   940

Lys Gln His Met Phe Asn Glu Lys Glu Asp Ser Cys Asn Gly Lys Gly
945   950   955   960

Arg Met Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu His Phe Ile
            965   970   975

Glu Gln Met

<210> 38
<211> 1047
<212> PRT
<213> Homo sapiens

<400> 38

Gly Ser Gly Gly Gly Gly Ala Glu Ala Ala Gly Gly Gly Arg Arg Ala
1   5   10   15

Ala Ala Pro Glu Arg Gly Lys Gly Gly Pro Asp Gly Ala Ser Ser Gln
            20   25   30

Pro Glu Asp Ala Ser Gly Arg Cys Ala Gln Arg Phe Ser Thr Leu Phe
            35   40   45

Ser Glu Leu Ala Val Arg Met Val Phe Ser Val Arg Gln Cys Gly His
    50   55   60

Val Gly Arg Thr Glu Glu Val Leu Leu Thr Phe Lys Ile Phe Leu Val
65   70   75   80

Ile Ile Cys Leu His Val Val Leu Val Thr Ser Leu Glu Glu Asp Thr
            85   90   95

Asp Asn Ser Ser Leu Ser Pro Pro Asp Val Thr Leu Ser Leu Leu
            100   105   110

Pro Ser Asn Glu Thr Glu Lys Thr Lys Ile Thr Ile Val Lys Thr Phe
            115   120   125

```
Asn Ala Ser Gly Val Lys Pro Gln Arg Asn Ile Cys Asn Leu Ser Ser
    130             135             140

Ile Cys Asn Asp Ser Ala Phe Phe Arg Gly Glu Ile Met Phe Gln Tyr
145             150             155             160

Asp Lys Glu Ser Thr Val Pro Gln Asn Gln His Ile Thr Asn Gly Thr
            165             170             175

Leu Thr Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn
        180             185             190

Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Met Cys Ala Thr
        195             200             205

Ala Glu Ala Gln Ser Thr Leu Asn Cys Thr Phe Thr Ile Lys Leu Asn
    210             215             220

Asn Thr Met Asn Ala Cys Ala Ala Ile Ala Ala Leu Glu Arg Val Lys
225             230             235             240

Ile Arg Pro Met Glu His Cys Cys Cys Ser Val Arg Ile Pro Cys Pro
            245             250             255

Ser Ser Pro Glu Glu Leu Gly Lys Leu Gln Cys Asp Leu Gln Asp Pro
            260             265             270

Ile Val Cys Leu Ala Asp His Pro Arg Gly Pro Pro Phe Ser Ser Ser
        275             280             285

Gln Ser Ile Pro Val Val Pro Arg Ala Thr Val Leu Ser Gln Val Pro
    290             295             300

Lys Ala Thr Ser Phe Ala Glu Pro Pro Asp Tyr Ser Pro Val Thr His
305             310             315             320

Asn Val Pro Ser Pro Ile Gly Glu Ile Gln Pro Leu Ser Pro Gln Pro
            325             330             335

Ser Ala Pro Ile Ala Ser Ser Pro Ala Ile Asp Met Pro Pro Gln Ser
            340             345             350

Glu Thr Ile Ser Ser Pro Met Pro Gln Thr His Val Ser Gly Thr Pro
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80

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                    355                     360                     365

Pro Pro Val Lys Ala Ser Phe Ser Ser Pro Thr Val Ser Ala Pro Ala
    370             375             380

Asn Val Asn Thr Thr Ser Ala Pro Pro Val Gln Thr Asp Ile Val Asn
385             390             395 .             400
                    .

Thr Ser Ser Ile Ser Asp Leu Glu Asn Gln Val Leu Gln Met Glu Lys
            405             410             415

Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met Ile
            420             425             430

Asn Gln Val Ser Arg Leu Leu His Ser Pro Pro Asp Met Leu Ala Pro
        435             440             445

Leu Ala Gln Arg Leu Leu Lys Val Val Asp Asp Ile Gly Leu Gln Leu
    450             455             460

Asn Phe Ser Asn Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu
465             470             475             480

Ala Val Ile Arg Val Asn Ala Ser Ser Phe Asn Thr Thr Thr Phe Val
            485             490             495

Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Thr Gln Ala Pro
        500             505             510

Glu Asn Ser Ile Gly Thr Ile Thr Leu Pro Ser Ser Leu Met Asn Asn
        515             520             525

Leu Pro Ala His Asp Met Glu Leu Ala Ser Arg Val Gln Phe Asn Phe
    530             535             540

Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu Ser
545             550             555             560

Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Ala Asn Leu Thr Val Arg
            565             570             575

Asn Leu Thr Arg Asn Val Thr Val Thr Leu Lys His Ile Asn Pro Ser
        580             585             590
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Gln Asp Glu Leu Thr Val Arg Cys Val Phe Trp Asp Leu Gly Arg Asn
        595                 600             605

Gly Gly Arg Gly Gly Trp Ser Asp Asn Gly Cys Ser Val Lys Asp Arg
        610             615                 620

Arg Leu Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe Gly
625                 630                 635                 640

Val Leu Leu Asp Leu Ser Arg Thr Ser Val Leu Pro Ala Gln Met Met
                645                 650                 655

Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe
            660                 665             670

Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg
            675                 680             685

Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu
    690                 695             700

Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Lys Met
705                 710                 715                 720

Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu Leu
            725                 730                 735

Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu Ala
            740                 745                 750

Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe
        755                 760                 765

Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val Thr Ile Ile Leu
    770                 775                 780

Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys Phe Pro
785                 790                 795                 800

Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala Val Phe
                805                 810                 815
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82

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Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn Val
        820             825             830

Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys Lys
        835             840             845

Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser
    850             855             860

Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe
865             870             875             880

Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala Ile
            885             890             895

Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Val Ala
        900             905             910

Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys
        915             920             925

Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly
    930             935             940

Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn Ser
945             950             955             960

Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu Val Asn
            965             970             975

Asn Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu
        980             985             990

Arg Asn Gly Val Ser Phe Ser Val  Gln Asn Gly Asp Val  Cys Leu His
        995             1000            1005

Asp Phe  Thr Gly Lys Gln His  Met Phe Asn Glu Lys  Glu Asp Ser
    1010            1015            1020

Cys Asn  Gly Lys Gly Arg Met  Ala Leu Arg Arg Thr  Ser Lys Arg
    1025            1030            1035
```

83

Gly Ser Leu His Phe Ile Glu Gln Met
    1040   1045

<210> 39
<211> 993
<212> PRT
<213> Homo sapiens

<400> 39

Met Val Phe Ser Val Arg Gln Cys Gly His Val Gly Arg Thr Glu Glu
1   5   10   15

Val Leu Leu Thr Phe Lys Ile Phe Leu Val Ile Ile Cys Leu His Val
            20   25   30

Val Leu Val Thr Ser Leu Glu Glu Asp Thr Asp Asn Ser Ser Leu Ser
        35   40   45

Pro Pro Pro Asp Val Thr Leu Ser Leu Leu Pro Ser Asn Glu Thr Glu
    50   55   60

Lys Thr Lys Ile Thr Ile Val Lys Thr Phe Asn Ala Ser Gly Val Lys
65   70   75   80

Pro Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Asn Asp Ser Ala
            85   90   95

Phe Phe Arg Gly Glu Ile Met Phe Gln Tyr Asp Lys Glu Ser Thr Val
            100   105   110

Pro Gln Asn Gln His Ile Thr Asn Gly Thr Leu Thr Gly Val Leu Ser
    115   120   125

Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu
    130   135   140

Ser Glu Thr Tyr Phe Ile Met Cys Ala Thr Ala Glu Ala Gln Ser Thr
145   150   155   160

Leu Asn Cys Thr Phe Thr Ile Lys Leu Asn Asn Thr Met Asn Ala Cys
            165   170   175

Ala Ala Ile Ala Ala Leu Glu Arg Val Lys Ile Arg Pro Met Glu His
            180   185   190

Cys Cys Cys Ser Val Arg Ile Pro Cys Pro Ser Ser Pro Glu Glu Leu
        195   200   205

Gly Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu Ala Asp
        210   215   220

His Pro Arg Gly Pro Pro Phe Ser Ser Ser Gln Ser Ile Pro Val Val
225   230   235   240

Pro Arg Ala Thr Val Leu Ser Gln Val Pro Lys Ala Thr Ser Phe Ala
            245   250   255

Glu Pro Pro Asp Tyr Ser Pro Val Thr His Asn Val Pro Ser Pro Ile
            260   265   270

Gly Glu Ile Gln Pro Leu Ser Pro Gln Pro Ser Ala Pro Ile Ala Ser
        275   280   285

Ser Pro Ala Ile Asp Met Pro Pro Gln Ser Glu Thr Ile Ser Ser Pro
    290 .   295   300

Met Pro Gln Thr His Val Ser Gly Thr Pro Pro Pro Val Lys Ala Ser
305   310   315   320

Phe Ser Ser Pro Thr Val Ser Ala Pro Ala Asn Val Asn Thr Thr Ser
            325   330   335

Ala Pro Pro Val Gln Thr Asp Ile Val Asn Thr Ser Ser Ile Ser Asp
        340   345   350

Leu Glu Asn Gln Val Leu Gln Met Glu Lys Ala Leu Ser Leu Gly Ser
        355   360   365

Leu Glu Pro Asn Leu Ala Gly Glu Met Ile Asn Gln Val Ser Arg Leu
        370   375   380

Leu His Ser Pro Pro Asp Met Leu Ala Pro Leu Ala Gln Arg Leu Leu
385   390   395   400

Lys Val Val Asp Asp Ile Gly Leu Gln Leu Asn Phe Ser Asn Thr Thr
            405   410   415

85

```
Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn
            420             425             430

Ala Ser Ser Phe Asn Thr Thr Thr Phe Val Ala Gln Asp Pro Ala Asn
            435             440             445

Leu Gln Val Ser Leu Glu Thr Gln Ala Pro Glu Asn Ser Ile Gly Thr
    450             455             460

Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala His Asp Met
465             470             475             480

Glu Leu Ala Ser Arg Val Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu
            485             490             495

Phe Gln Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile
            500             505             510

Ser Ser Ser Val Ala Asn Leu Thr Val Arg Asn Leu Thr Arg Asn Val
            515             520             525

Thr Val Thr Leu Lys His Ile Asn Pro Ser Gln Asp Glu Leu Thr Val
    530             535             540

Arg Cys Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Arg Gly Gly Trp
545             550             555             560

Ser Asp Asn Gly Cys Ser Val Lys Asp Arg Arg Leu Asn Glu Thr Ile
            565             570             575

Cys Thr Cys Ser His Leu Thr Ser Phe Gly Val Leu Leu Asp Leu Ser
            580             585             590

Arg Thr Ser Val Leu Pro Ala Gln Met Met Ala Leu Thr Phe Ile Thr
            595             600             605

Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val
    610             615             620

Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile
625             630             635             640
```

```
Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Val Phe Leu
            645             650             655

Leu Asp Ser Trp Ile Ala Leu Tyr Lys Met Gln Gly Leu Cys Ile Ser
            660             665             670

Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met
            675             680             685

Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn
    690             695             700

Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly
705             710             715             720

Val Pro Ala Val Val Val Thr Ile Ile Leu Thr Ile Ser Pro Asp Asn
            725             730             735

Tyr Gly Leu Gly Ser Tyr Gly Lys Phe Pro Asn Gly Ser Pro Asp Asp
            740             745             750

Phe Cys Trp Ile Asn Asn Asn Ala Val Phe Tyr Ile Thr Val Val Gly
            755             760             765

Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val
    770             775             780

Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Gln Leu Gly Ala Gln
785             790             795             800

Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe
            805             810             815

Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val
            820             825             830

Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly
            835             840             845

Phe Phe Ile Phe Ile Phe Tyr Cys Val Ala Lys Glu Asn Val Arg Lys
    850             855             860

Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn
```

Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val
              885   890   895

Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Ser Asn
              900   905   910

Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Asn Asp Cys Ser Val His
          915   920   925

Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe
    930   ,   935   940

Ser Val Gln Asn Gly Asp Val Cys Leu His Asp Phe Thr Gly Lys Gln
945   950   955   960

His Met Phe Asn Glu Lys Glu Asp Ser Cys Asn Gly Lys Gly Arg Met
              965   970   975

Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu His Phe Ile Glu Gln
          980   985   990

Met

<210> 40
<211> 1057
<212> PRT
<213> Homo sapiens

<400> 40

Gly Ser Gly Gly Gly Gly Ala Glu Ala Ala Gly Gly Gly Arg Arg Ala
1   5   10   .   15

Ala Ala Pro Glu Arg Gly Lys Gly Gly Pro Asp Gly Ala Ser Ser Gln
          20   25   30

Pro Glu Asp Ala Ser Gly Arg Cys Ala Gln Arg Phe Ser Thr Leu Phe
          35   40   45

Ser Glu Leu Ala Val Arg Met Val Phe Ser Val Arg Gln Cys Gly His
      50   55   60

88

Val Gly Arg Thr Glu Glu Val Leu Leu Thr Phe Lys Ile Phe Leu Val
65   70   75   80

Ile Ile Cys Leu His Val Val Leu Val Thr Ser Leu Glu Glu Asp Thr
            85   90   95

Asp Asn Ser Ser Leu Ser Pro Pro Pro Ala Lys Leu Ser Val Val Ser
            100   105   110

Phe Ala Pro Ser Ser Asn Gly Thr Pro Glu Val Glu Thr Thr Ser Leu
        115   120   125

Asn Asp Val Thr Leu Ser Leu Leu Pro Ser Asn Glu Thr Gly Val Lys
    130   135   140

Pro Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Asn Asp Ser Ala
145   150   155   160

Phe Phe Arg Gly Glu Ile Met Phe Gln Tyr Asp Lys Glu Ser Thr Val
            165   170   175

Pro Gln Asn Gln His Ile Thr Asn Gly Thr Leu Thr Gly Val Leu Ser
        180   185   190

Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu
    195   200   205

Ser Glu Thr Tyr Phe Ile Met Cys Ala Thr Ala Glu Ala Gln Ser Thr
    210   215   220

Leu Asn Cys Thr Phe Thr Ile Lys Leu Asn Asn Thr Met Asn Ala Cys
225   230   235   240

Ala Ala Ile Ala Ala Leu Glu Arg Val Lys Ile Arg Pro Met Glu His
            245   250   255

Cys Cys Cys Ser Val Arg Ile Pro Cys Pro Ser Ser Pro Glu Glu Leu
            260   265   270

Gly Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu Ala Asp
        275   280   285

89

His Pro Arg Gly Pro Pro Phe Ser Ser Ser Gln Ser Ile Pro Val Val
290   295   300

Pro Arg Ala Thr Val Leu Ser Gln Val Pro Lys Ala Thr Ser Phe Ala
305   310   315   320

Glu Pro Pro Asp Tyr Ser Pro Val Thr His Asn Val Pro Ser Pro Ile
                325   330   335

Gly Glu Ile Gln Pro Leu Ser Pro Gln Pro Ser Ala Pro Ile Ala Ser
                340   345   350

Ser Pro Ala Ile Asp Met Pro Pro Gln Ser Glu Thr Ile Ser Ser Pro
                355   360   365

Met Pro Gln Thr His Val Ser Gly Thr Pro Pro Pro Val Lys Ala Ser
        370   375   380

Phe Ser Ser Pro Thr Val Ser Ala Pro Ala Asn Val Asn Thr Thr Ser
385   390   395   400

Ala Pro Pro Val Gln Thr Asp Ile Val Asn Thr Ser Ser Ile Ser Asp
                405   410   415

Leu Glu Asn Gln Val Leu Gln Met Glu Lys Ala Leu Ser Leu Gly Ser
                420   425   430

Leu Glu Pro Asn Leu Ala Gly Glu Met Ile Asn Gln Val Ser Arg Leu
                435   440   445

Leu His Ser Pro Pro Asp Met Leu Ala Pro Leu Ala Gln Arg Leu Leu
        450   455   460

Lys Val Val Asp Asp Ile Gly Leu Gln Leu Asn Phe Ser Asn Thr Thr
465   470   475   480

Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn
                485   490   495

Ala Ser Ser Phe Asn Thr Thr Thr Phe Val Ala Gln Asp Pro Ala Asn
                500   505   510

Leu Gln Val Ser Leu Glu Thr Gln Ala Pro Glu Asn Ser Ile Gly Thr

```
                  515                      520                      525


Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala His Asp Met
    530             535             540


Glu Leu Ala Ser Arg Val Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu
545             550             555             560


Phe Gln Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile
            565             570             575


Ser Ser Ser Val Ala Asn Leu Thr Val Arg Asn Leu Thr Arg Asn Val
            580             585             590


Thr Val Thr Leu Lys His Ile Asn Pro Ser Gln Asp Glu Leu Thr Val
            595             600             605


Arg Cys Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Arg Gly Gly Trp
    610             615             620


Ser Asp Asn Gly Cys Ser Val Lys Asp Arg Arg Leu Asn Glu Thr Ile
625             630             635             640


Cys Thr Cys Ser His Leu Thr Ser Phe Gly Val Leu Leu Asp Leu Ser
            645             650             655


Arg Thr Ser Val Leu Pro Ala Gln Met Met Ala Leu Thr Phe Ile Thr
            660             665             670


Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val
    675             680             685


Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile
    690             695             700


Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Val Phe Leu
705             710             715             720


Leu Asp Ser Trp Ile Ala Leu Tyr Lys Met Gln Gly Leu Cys Ile Ser
            725             730             735


Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met
            740             745             750
```

91

Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn
        755   760   765

Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly
    770   775   780

Val Pro Ala Val Val Val Thr Ile Ile Leu Thr Ile Ser Pro Asp Asn
785   790   795   800

Tyr Gly Leu Gly Ser Tyr Gly Lys Phe Pro Asn Gly Ser Pro Asp Asp
            805   810   815

Phe Cys Trp Ile Asn Asn Asn Ala Val Phe Tyr Ile Thr Val Val Gly
        820   825   830

Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val
        835   840   845

Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln
    850   855   860

Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe
865   870   875   880

Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val
            885   890   895

Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly
            900   905   910

Phe Phe Ile Phe Ile Phe Tyr Cys Val Ala Lys Glu Asn Val Arg Lys
        915   920   925

Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn
    930   935   940

Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val
945   950   955   960

Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Ser Asn
            965   970   975

92

```
Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Asn Asp Cys Ser Val His
          980               985               990


Ala Ser Gly Asn Gly Asn Ala Ser  Thr Glu Arg Asn Gly  Val Ser Phe
          995               1000              1005


Ser Val  Gln Asn Gly Asp Val  Cys Leu His Asp Phe  Thr Gly Lys
    1010              1015              1020


Gln His  Met Phe Asn Glu Lys  Glu Asp Ser Cys Asn  Gly Lys Gly
    1025              1030              1035


Arg Met  Ala Leu Arg Arg Thr  Ser Lys Arg Gly Ser  Leu His Phe
    1040              1045              1050


Ile Glu  Gln Met
    1055


<210>  41
<211>  1003
<212>  PRT
<213>  Homo sapiens

<400>  41

Met Val Phe Ser Val Arg Gln Cys Gly His Val Gly Arg Thr Glu Glu
1             5               10              15


Val Leu Leu Thr Phe Lys Ile Phe Leu Val Ile Ile Cys Leu His Val
          20              25              30


Val Leu Val Thr Ser Leu Glu Glu Asp Thr Asp Asn Ser Ser Leu Ser
          35              40              45


Pro Pro Pro Ala Lys Leu Ser Val Val Ser Phe Ala Pro Ser Ser Asn
    50              55              60


Gly Thr Pro Glu Val Glu Thr Thr Ser Leu Asn Asp Val Thr Leu Ser
65              70              75              80


Leu Leu Pro Ser Asn Glu Thr Gly Val Lys Pro Gln Arg Asn Ile Cys
              85              90              95


Asn Leu Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe Arg Gly Glu Ile
```

```
                    100                   105                      110


Met Phe Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln Asn Gln His Ile
        115             120             125

Thr Asn Gly Thr Leu Thr Gly Val Leu Ser Leu Ser Glu Leu Lys Arg
    130             135             140

Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile
145             150             155             160

Met Cys Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn Cys Thr Phe Thr
            165             170             175

Ile Lys Leu Asn Asn Thr Met Asn Ala Cys Ala Ala Ile Ala Ala Leu
        180             185             190

Glu Arg Val Lys Ile Arg Pro Met Glu His Cys Cys Cys Ser Val Arg
        195             200             205

Ile Pro Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys Leu Gln Cys Asp
    210             215             220

Leu Gln Asp Pro Ile Val Cys Leu Ala Asp His Pro Arg Gly Pro Pro
225             230             235             240

Phe Ser Ser Ser Gln Ser Ile Pro Val Val Pro Arg Ala Thr Val Leu
            245             250             255

Ser Gln Val Pro Lys Ala Thr Ser Phe Ala Glu Pro Pro Asp Tyr Ser
            260             265             270

Pro Val Thr His Asn Val Pro Ser Pro Ile Gly Glu Ile Gln Pro Leu
    275             280             285

Ser Pro Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro Ala Ile Asp Met
    290             295             300

Pro Pro Gln Ser Glu Thr Ile Ser Ser Pro Met Pro Gln Thr His Val
305             310             315             320

Ser Gly Thr Pro Pro Pro Val Lys Ala Ser Phe Ser Ser Pro Thr Val
            325             330             335
```

Ser Ala Pro Ala Asn Val Asn Thr Thr Ser Ala Pro Pro Val Gln Thr
            340   345   350

Asp Ile Val Asn Thr Ser Ser Ile Ser Asp Leu Glu Asn Gln Val Leu
        355   360   365

Gln Met Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala
    370   375   380

Gly Glu Met Ile Asn Gln Val Ser Arg Leu Leu His Ser Pro Pro Asp
385   390   395   400

Met Leu Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Asp Ile
            405   410   415

Gly Leu Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser Leu Thr Ser Pro
            420   425   430

Ser Leu Ala Leu Ala Val Ile Arg Val Asn Ala Ser Ser Phe Asn Thr
        435   440   445

Thr Thr Phe Val Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu
    450   455   460

Thr Gln Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr Leu Pro Ser Ser
465   470   475   480

Leu Met Asn Asn Leu Pro Ala His Asp Met Glu Leu Ala Ser Arg Val
            485   490   495

Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu
        500   505   510

Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Ala Asn
        515   520   525

Leu Thr Val Arg Asn Leu Thr Arg Asn Val Thr Val Thr Leu Lys His
    530   535   540

Ile Asn Pro Ser Gln Asp Glu Leu Thr Val Arg Cys Val Phe Trp Asp
545   550   555   560

```
Leu Gly Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp Asn Gly Cys Ser
                565             570                 575

Val Lys Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr Cys Ser His Leu
            580             585             590

Thr Ser Phe Gly Val Leu Leu Asp Leu Ser Arg Thr Ser Val Leu Pro
        595             600             605

Ala Gln Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu
    610             615             620

Ser Ser Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu
625             630             635             640

Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala
            645             650             655

Ala Leu Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala
        660             665             670

Leu Tyr Lys Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His
    675             680             685

Tyr Phe Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His
    690             695             700

Met Tyr Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr
705             710             715             720

Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val
            725             730             735

Thr Ile Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr
        740             745             750

Gly Lys Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn
        755             760             765

Asn Ala Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe
770             775             780
```

96

```
Leu Leu Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg
785             790             795             800

Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln
            805             810             815

Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp
            820             825             830

Gly Phe Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr
        835             840             845

Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe
    850             855             860

Tyr Cys Val Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu
865             870             875             880

Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr
            885             890             895

Ala Thr Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser
            900             905             910

Ser Ser Asn Ser Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr
            915             920             925

Leu Leu Val Asn Asn Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn
    930             935             940

Ala Ser Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp
945             950             955             960

Val Cys Leu His Asp Phe Thr Gly Lys Gln His Met Phe Asn Glu Lys
            965             970             975

Glu Asp Ser Cys Asn Gly Lys Gly Arg Met Ala Leu Arg Arg Thr Ser
            980             985             990

Lys Arg Gly Ser Leu His Phe Ile  Glu Gln Met
        995             1000

<210>   42
```

<211> 1055
<212> PRT
<213> Homo sapiens

<400> 42

Gly Ser Gly Gly Gly Gly Ala Glu Ala Ala Gly Gly Gly Arg Arg Ala
1   5   10   15

Ala Ala Pro Glu Arg Gly Lys Gly Gly Pro Asp Gly Ala Ser Ser Gln
            20   25   30

Pro Glu Asp Ala Ser Gly Arg Cys Ala Gln Arg Phe Ser Thr Leu Phe
        35   40   45

Ser Glu Leu Ala Val Arg Met Val Phe Ser Val Arg Gln Cys Gly His
    50   55   60

Val Gly Arg Thr Glu Glu Val Leu Leu Thr Phe Lys Ile Phe Leu Val
65   70   75   80

Ile Ile Cys Leu His Val Val Leu Val Thr Ser Leu Glu Glu Asp Thr
            85   90   95

Asp Asn Ser Ser Leu Ser Pro Pro Pro Glu Val Glu Thr Thr Ser Leu
            100   105   110

Asn Asp Val Thr Leu Ser Leu Leu Pro Ser Asn Glu Thr Glu Lys Thr
            115   120   125

Lys Ile Thr Ile Val Lys Thr Phe Asn Ala Ser Gly Val Lys Pro Gln
    130   135   140

Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe
145   150   155   160

Arg Gly Glu Ile Met Phe Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln
            165   170   175

Asn Gln His Ile Thr Asn Gly Thr Leu Thr Gly Val Leu Ser Leu Ser
            180   185   190

Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu
            195   200   205

98

```
Thr Tyr Phe Ile Met Cys Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn
    210             215             220

Cys Thr Phe Thr Ile Lys Leu Asn Asn Thr Met Asn Ala Cys Ala Ala
225             230             235             240

Ile Ala Ala Leu Glu Arg Val Lys Ile Arg Pro Met Glu His Cys Cys
            245             250             255

Cys Ser Val Arg Ile Pro Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys
            260             265             270

Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu Ala Asp His Pro
        275             280             285

Arg Gly Pro Pro Phe Ser Ser Ser Gln Ser Ile Pro Val Val Pro Arg
    290             295             300

Ala Thr Val Leu Ser Gln Val Pro Lys Ala Thr Ser Phe Ala Glu Pro
305             310             315             320

Pro Asp Tyr Ser Pro Val Thr His Asn Val Pro Ser Pro Ile Gly Glu
            325             330             335

Ile Gln Pro Leu Ser Pro Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro
        340             345             350

Ala Ile Asp Met Pro Pro Gln Ser Glu Thr Ile Ser Ser Pro Met Pro
        355             360             365

Gln Thr His Val Ser Gly Thr Pro Pro Pro Val Lys Ala Ser Phe Ser
    370             375             380

Ser Pro Thr Val Ser Ala Pro Ala Asn Val Asn Thr Thr Ser Ala Pro
385             390             395             400

Pro Val Gln Thr Asp Ile Val Asn Thr Ser Ser Ile Ser Asp Leu Glu
            405             410             415

Asn Gln Val Leu Gln Met Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu
        420             425             430
```

Pro Asn Leu Ala Gly Glu Met Ile Asn Gln Val Ser Arg Leu Leu His
    435   440   445

Ser Pro Pro Asp Met Leu Ala Pro Leu Ala Gln Arg Leu Leu Lys Val
    450   455   460

Val Asp Asp Ile Gly Leu Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser
465   470   475   480

Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn Ala Ser
            485   490   495

Ser Phe Asn Thr Thr Thr Phe Val Ala Gln Asp Pro Ala Asn Leu Gln
            500   505   510

Val Ser Leu Glu Thr Gln Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr
    515   520   525

Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala His Asp Met Glu Leu
    530   535   540

Ala Ser Arg Val Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln
545   550   555   560

Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser
            565   570   575

Ser Val Ala Asn Leu Thr Val Arg Asn Leu Thr Arg Asn Val Thr Val
            580   585   590

Thr Leu Lys His Ile Asn Pro Ser Gln Asp Glu Leu Thr Val Arg Cys
    595   600   605

Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp
    610   615   620

Asn Gly Cys Ser Val Lys Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr
625   630   635   640

Cys Ser His Leu Thr Ser Phe Gly Val Leu Leu Asp Leu Ser Arg Thr
            645   650   655

Ser Val Leu Pro Ala Gln Met Met Ala Leu Thr Phe Ile Thr Tyr Ile

```
                 660                      665                         670

Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val Thr Tyr
        675             680             685

Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile
    690             695             700

Gln Leu Cys Ala Ala Leu Leu Leu Asn Leu Val Phe Leu Leu Asp
705             710             715                     720

Ser Trp Ile Ala Leu Tyr Lys Met Gln Gly Leu Cys Ile Ser Val Ala
            725             730             735

Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met Gly Leu
            740             745             750

Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn Thr Tyr
        755             760             765

Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Val Pro
    770             775             780

Ala Val Val Val Thr Ile Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly
785             790             795                     800

Leu Gly Ser Tyr Gly Lys Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys
            805             810             815

Trp Ile Asn Asn Asn Ala Val Phe Tyr Ile Thr Val Val Gly Tyr Phe
            820             825             830

Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val Leu Val
            835             840             845

Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys
        850             855             860

Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu
865             870             875                     880

Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val Asn Val
            885             890             895

                                                              101
```

```
Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe
        900             905             910

Ile Phe Ile Phe Tyr Cys Val Ala Lys Glu Asn Val Arg Lys Gln Trp
        915             920             925

Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp
    930             935             940

Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val Asn Gln
945             950             955             960

Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Ser Asn Ser Thr
            965             970             975

Asn Ser Thr Thr Leu Leu Val Asn Asn Asp Cys Ser Val His Ala Ser
        980             985             990

Gly Asn Gly Asn Ala Ser Thr Glu  Arg Asn Gly Val Ser  Phe Ser Val
        995             1000            1005

Gln Asn  Gly Asp Val Cys Leu  His Asp Phe Thr Gly  Lys Gln His
    1010            1015            1020

Met Phe  Asn Glu Lys Glu Asp  Ser Cys Asn Gly Lys  Gly Arg Met
    1025            1030            1035

Ala Leu  Arg Arg Thr Ser Lys  Arg Gly Ser Leu His  Phe Ile Glu
    1040            1045            1050

Gln Met
    1055


<210>   43
<211>   1001
<212>   PRT
<213>   Homo sapiens

<400>   43

Met Val Phe Ser Val Arg Gln Cys Gly His Val Gly Arg Thr Glu Glu
1               5               10              15
```

Val Leu Leu Thr Phe Lys Ile Phe Leu Val Ile Ile Cys Leu His Val
        20   25   30

Val Leu Val Thr Ser Leu Glu Glu Asp Thr Asp Asn Ser Ser Leu Ser
        35   40   45

Pro Pro Pro Glu Val Glu Thr Thr Ser Leu Asn Asp Val Thr Leu Ser
    50   55   60

Leu Leu Pro Ser Asn Glu Thr Glu Lys Thr Lys Ile Thr Ile Val Lys
65   70   75   80

Thr Phe Asn Ala Ser Gly Val Lys Pro Gln Arg Asn Ile Cys Asn Leu
            85   90   95

Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe Arg Gly Glu Ile Met Phe
            100   105   110

Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln Asn Gln His Ile Thr Asn
        115   120   125

Gly Thr Leu Thr Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu
    130   135   140

Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Met Cys
145   150   155   160

Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn Cys Thr Phe Thr Ile Lys
            165   170   175

Leu Asn Asn Thr Met Asn Ala Cys Ala Ala Ile Ala Ala Leu Glu Arg
            180   185   190

Val Lys Ile Arg Pro Met Glu His Cys Cys Cys Ser Val Arg Ile Pro
        195   200   205

Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys Leu Gln Cys Asp Leu Gln
    210   .   215   220

Asp Pro Ile Val Cys Leu Ala Asp His Pro Arg Gly Pro Pro Phe Ser
225   230   235   240

Ser Ser Gln Ser Ile Pro Val Val Pro Arg Ala Thr Val Leu Ser Gln

```
                        245                     250                        255


Val Pro Lys Ala Thr Ser Phe Ala Glu Pro Pro Asp Tyr Ser Pro Val
            260                 265             270

Thr His Asn Val Pro Ser Pro Ile Gly Glu Ile Gln Pro Leu Ser Pro
        275                 280                 285

Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro Ala Ile Asp Met Pro Pro
    290                 295                 300

Gln Ser Glu Thr Ile Ser Ser Pro Met Pro Gln Thr His Val Ser Gly
305                 310                 315                     320

Thr Pro Pro Pro Val Lys Ala Ser Phe Ser Ser Pro Thr Val Ser Ala
                325                 330                 335

Pro Ala Asn Val Asn Thr Thr Ser Ala Pro Pro Val Gln Thr Asp Ile
            340                 345                 350

Val Asn Thr Ser Ser Ile Ser Asp Leu Glu Asn Gln Val Leu Gln Met
        355                 360                 365

Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu
    370                 375                 380

Met Ile Asn Gln Val Ser Arg Leu Leu His Ser Pro Pro Asp Met Leu
385                 390                 395                     400

Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Asp Ile Gly Leu
                405                 410                 415

Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu
            420                 425                 430

Ala Leu Ala Val Ile Arg Val Asn Ala Ser Ser Phe Asn Thr Thr Thr
        435                 440                 445

Phe Val Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Thr Gln
    450                 455                 460

Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr Leu Pro Ser Ser Leu Met
465                 470                 475                     480
```

Asn Asn Leu Pro Ala His Asp Met Glu Leu Ala Ser Arg Val Gln Phe
            485   490   495

Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn
            500   505   510

Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Ala Asn Leu Thr
            515   520   525

Val Arg Asn Leu Thr Arg Asn Val Thr Val Thr Leu Lys His Ile Asn
    530   535   540

Pro Ser Gln Asp Glu Leu Thr Val Arg Cys Val Phe Trp Asp Leu Gly
545   550   555   560

Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp Asn Gly Cys Ser Val Lys
            565   570   575

Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser
            580   585   590

Phe Gly Val Leu Leu Asp Leu Ser Arg Thr Ser Val Leu Pro Ala Gln
            595   600   605

Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser
    610   615   620

Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile
625   630   635   640

Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu
            645   650   655

Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr
            660   665   670

Lys Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe
            675   680   685

Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr
    690   695   700

```
Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu
705             710             715             720

Lys Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val Thr Ile
                725             730             735

Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys
            740             745             750

Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala
        755             760             765

Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu
    770             775             780

Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys
785             790             795             800

Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu
            805             810             815

Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe
        820             825             830

Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe
        835             840             845

Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys
    850             855             860

Val Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys
865             870             875             880

Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr
            885             890             895

Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser
            900             905             910

Asn Ser Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu
        915             920             925
```

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Val Asn Asn Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser
    930   935   940

Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys
945   950   955   960

Leu His Asp Phe Thr Gly Lys Gln His Met Phe Asn Glu Lys Glu Asp
                965   970   975

Ser Cys Asn Gly Lys Gly Arg Met Ala Leu Arg Arg Thr Ser Lys Arg
                980   985   990

Gly Ser Leu His Phe Ile Glu Gln Met
            995   1000

<210>   44
<211>   1041
<212>   PRT
<213>   Homo sapiens

<400>   44

Gly Ser Gly Gly Gly Gly Ala Glu Ala Ala Gly Gly Gly Arg Arg Ala
1   5   10   15

Ala Ala Pro Glu Arg Gly Lys Gly Gly Pro Asp Gly Ala Ser Ser Gln
            20   25   30

Pro Glu Asp Ala Ser Gly Arg Cys Ala Gln Arg Phe Ser Thr Leu Phe
            35   40   45

Ser Glu Leu Ala Val Arg Met Val Phe Ser Val Arg Gln Cys Gly His
        50   55   60

Val Gly Arg Thr Glu Glu Val Leu Leu Thr Phe Lys Ile Phe Leu Val
65   70   75   80

Ile Ile Cys Leu His Val Val Leu Val Thr Ser Leu Glu Glu Asp Thr
                85   90   95

Asp Asn Ser Ser Leu Ser Pro Pro Glu Val Glu Thr Thr Ser Leu
            100   105   110

Asn Asp Val Thr Leu Ser Leu Leu Pro Ser Asn Glu Thr Gly Val Lys
            115   120   125

Pro Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Asn Asp Ser Ala
    130   135   140

Phe Phe Arg Gly Glu Ile Met Phe Gln Tyr Asp Lys Glu Ser Thr Val
145   150   155   160

Pro Gln Asn Gln His Ile Thr Asn Gly Thr Leu Thr Gly Val Leu Ser
            165   170   175

Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu
            180   185   190

Ser Glu Thr Tyr Phe Ile Met Cys Ala Thr Ala Glu Ala Gln Ser Thr
            195   200   205

Leu Asn Cys Thr Phe Thr Ile Lys Leu Asn Asn Thr Met Asn Ala Cys
    210   215   220

Ala Ala Ile Ala Ala Leu Glu Arg Val Lys Ile Arg Pro Met Glu His
225   230   235   240

Cys Cys Cys Ser Val Arg Ile Pro Cys Pro Ser Ser Pro Glu Glu Leu
            245   250   255

Gly Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu Ala Asp
            260   265   270

His Pro Arg Gly Pro Pro Phe Ser Ser Ser Gln Ser Ile Pro Val Val
            275   280   285

Pro Arg Ala Thr Val Leu Ser Gln Val Pro Lys Ala Thr Ser Phe Ala
            290   295   300

Glu Pro Pro Asp Tyr Ser Pro Val Thr His Asn Val Pro Ser Pro Ile
305   310   315   320

Gly Glu Ile Gln Pro Leu Ser Pro Gln Pro Ser Ala Pro Ile Ala Ser
            325   330   335

Ser Pro Ala Ile Asp Met Pro Pro Gln Ser Glu Thr Ile Ser Ser Pro
            340   345   350

108

```
Met Pro Gln Thr His Val Ser Gly Thr Pro Pro Val Lys Ala Ser
        355             360         365

Phe Ser Ser Pro Thr Val Ser Ala Pro Ala Asn Val Asn Thr Thr Ser
        370             375         380

Ala Pro Pro Val Gln Thr Asp Ile Val Asn Thr Ser Ser Ile Ser Asp
385             390             395             400

Leu Glu Asn Gln Val Leu Gln Met Glu Lys Ala Leu Ser Leu Gly Ser
                405             410             415

Leu Glu Pro Asn Leu Ala Gly Glu Met Ile Asn Gln Val Ser Arg Leu
            420             425             430

Leu His Ser Pro Pro Asp Met Leu Ala Pro Leu Ala Gln Arg Leu Leu
        435             440             445

Lys Val Val Asp Asp Ile Gly Leu Gln Leu Asn Phe Ser Asn Thr Thr
    450             455             460

Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn
465             470             475             480

Ala Ser Ser Phe Asn Thr Thr Thr Phe Val Ala Gln Asp Pro Ala Asn
            485             490             495

Leu Gln Val Ser Leu Glu Thr Gln Ala Pro Glu Asn Ser Ile Gly Thr
        500             505             510

Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala His Asp Met
        515             520             525

Glu Leu Ala Ser Arg Val Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu
    530             535             540

Phe Gln Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile
545             550             555             560

Ser Ser Ser Val Ala Asn Leu Thr Val Arg Asn Leu Thr Arg Asn Val
            565             570             575
```

```
Thr Val Thr Leu Lys His Ile Asn Pro Ser Gln Asp Glu Leu Thr Val
        580             585             590

Arg Cys Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Arg Gly Gly Trp
        595             600             605

Ser Asp Asn Gly Cys Ser Val Lys Asp Arg Arg Leu Asn Glu Thr Ile
    610             615             620

Cys Thr Cys Ser His Leu Thr Ser Phe Gly Val Leu Leu Asp Leu Ser
625             630             635             640

Arg Thr Ser Val Leu Pro Ala Gln Met Met Ala Leu Thr Phe Ile Thr
            645             650             655

Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val
        660             665             670

Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile
        675             680             685

Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Val Phe Leu
    690             695             700

Leu Asp Ser Trp Ile Ala Leu Tyr Lys Met Gln Gly Leu Cys Ile Ser
705             710             715             720

Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met
            725             730             735

Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn
            740             745             750

Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly
        755             760             765

Val Pro Ala Val Val Val Thr Ile Ile Leu Thr Ile Ser Pro Asp Asn
    770             775             780

Tyr Gly Leu Gly Ser Tyr Gly Lys Phe Pro Asn Gly Ser Pro Asp Asp
785             790             795             800

Phe Cys Trp Ile Asn Asn Asn Ala Val Phe Tyr Ile Thr Val Val Gly
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110

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                    805                     810                     815

Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val
            820                 825                 830

Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Gln Leu Gly Ala Gln
        835                 840                 845

Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe
    850                 855                 860

Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Ala Trp Gly Pro Val
865                 870                 875                 880

Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly
                885                 890                 895

Phe Phe Ile Phe Ile Phe Tyr Cys Val Ala Lys Glu Asn Val Arg Lys
            900                 905                 910

Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn
        915                 920                 925

Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val
    930                 935                 940

Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Ser Asn
945                 950                 955                 960

Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Asn Asp Cys Ser Val His
                965                 970                 975

Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe
            980                 985                 990

Ser Val Gln Asn Gly Asp Val Cys  Leu His Asp Phe Thr  Gly Lys Gln
        995                 1000                1005

His Met  Phe Asn Glu Lys Glu  Asp Ser Cys Asn Gly  Lys Gly Arg
    1010                1015                1020

Met Ala  Leu Arg Arg Thr Ser  Lys Arg Gly Ser Leu  His Phe Ile
    1025                1030                1035
```

111

Glu Gln Met
     1040

<210> 45
<211> 987
<212> PRT
<213> Homo sapiens

<400> 45

Met Val Phe Ser Val Arg Gln Cys Gly His Val Gly Arg Thr Glu Glu
1   5   10   15

Val Leu Leu Thr Phe Lys Ile Phe Leu Val Ile Ile Cys Leu His Val
              20   25   30

Val Leu Val Thr Ser Leu Glu Glu Asp Thr Asp Asn Ser Ser Leu Ser
              35   40   45

Pro Pro Pro Glu Val Glu Thr Thr Ser Leu Asn Asp Val Thr Leu Ser
        50   55   60

Leu Leu Pro Ser Asn Glu Thr Gly Val Lys Pro Gln Arg Asn Ile Cys
65   70   75   80

Asn Leu Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe Arg Gly Glu Ile
                85   90   95

Met Phe Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln Asn Gln His Ile
            100   105   110

Thr Asn Gly Thr Leu Thr Gly Val Leu Ser Leu Ser Glu Leu Lys Arg
        115   120   125

Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile
        130   135   140

Met Cys Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn Cys Thr Phe Thr
145   150   155   160

Ile Lys Leu Asn Asn Thr Met Asn Ala Cys Ala Ala Ile Ala Ala Leu
              165   170   175

112

```
Glu Arg Val Lys Ile Arg Pro Met Glu His Cys Cys Cys Ser Val Arg
            180             185             190

Ile Pro Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys Leu Gln Cys Asp
        195             200             205

Leu Gln Asp Pro Ile Val Cys Leu Ala Asp His Pro Arg Gly Pro Pro
    210             215             220

Phe Ser Ser Ser Gln Ser Ile Pro Val Val Pro Arg Ala Thr Val Leu
225             230             235             240

Ser Gln Val Pro Lys Ala Thr Ser Phe Ala Glu Pro Pro Asp Tyr Ser
            245             250             255

Pro Val Thr His Asn Val Pro Ser Pro Ile Gly Glu Ile Gln Pro Leu
            260             265             270

Ser Pro Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro Ala Ile Asp Met
            275             280             285

Pro Pro Gln Ser Glu Thr Ile Ser Ser Pro Met Pro Gln Thr His Val
    290             295             300

Ser Gly Thr Pro Pro Pro Val Lys Ala Ser Phe Ser Ser Pro Thr Val
305             310             315             320

Ser Ala Pro Ala Asn Val Asn Thr Thr Ser Ala Pro Pro Val Gln Thr
            325             330             335

Asp Ile Val Asn Thr Ser Ser Ile Ser Asp Leu Glu Asn Gln Val Leu
            340             345             350

Gln Met Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala
            355             360             365

Gly Glu Met Ile Asn Gln Val Ser Arg Leu Leu His Ser Pro Pro Asp
    370             375             380

Met Leu Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Asp Ile
385             390             395             400

Gly Leu Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser Leu Thr Ser Pro
```

113

```
                    405                      410                      415


Ser Leu Ala Leu Ala Val Ile Arg Val Asn Ala Ser Ser Phe Asn Thr
            420                 425                 430


Thr Thr Phe Val Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu
        435                 440                 445


Thr Gln Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr Leu Pro Ser Ser
    450                 455                 460


Leu Met Asn Asn Leu Pro Ala His Asp Met Glu Leu Ala Ser Arg Val
465                 470                 475                     480


Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu
            485                 490                     495


Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Ala Asn
            500                 505                 510


Leu Thr Val Arg Asn Leu Thr Arg Asn Val Thr Val Thr Leu Lys His
        515                 520                 525


Ile Asn Pro Ser Gln Asp Glu Leu Thr Val Arg Cys Val Phe Trp Asp
    530                 535                 540


Leu Gly Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp Asn Gly Cys Ser
545                 550                 555                     560


Val Lys Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr Cys Ser His Leu
            565                 570                 575


Thr Ser Phe Gly Val Leu Leu Asp Leu Ser Arg Thr Ser Val Leu Pro
            580                 585                 590


Ala Gln Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu
        595                 600                 605


Ser Ser Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu
    610                 615                 620


Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala
625                 630                 635                     640


                                                                114
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Ala Leu Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala
              645         650                 655

Leu Tyr Lys Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His
              660         665                 670

Tyr Phe Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His
          675             680                 685

Met Tyr Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr
    690             695             700

Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val
705             710             715                     720

Thr Ile Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr
              725             730                 735

Gly Lys Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn
              740             745             750

Asn Ala Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe
              755             760             765

Leu Leu Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg
    770             775             780

Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln
785             790             795                     800

Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp
              805  .            810                 815

Gly Phe Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr
          820             825                 830

Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe
          835             840                 845

Tyr Cys Val Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu
    850             855             860
```

Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr
865   870   875   880

Ala Thr Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser
                885   890   895

Ser Ser Asn Ser Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr
                900   905   910

Leu Leu Val Asn Asn Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn
            915   920   925

Ala Ser Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp
    930   935   940

Val Cys Leu His Asp Phe Thr Gly Lys Gln His Met Phe Asn Glu Lys
945   950   955   960

Glu Asp Ser Cys Asn Gly Lys Gly Arg Met Ala Leu Arg Arg Thr Ser
            965   970   975

Lys Arg Gly Ser Leu His Phe Ile Glu Gln Met
            980   985

<210>   46
<211>   1049
<212>   PRT
<213>   Homo sapiens

<400>   46

Gly Ser Gly Gly Gly Gly Ala Glu Ala Ala Gly Gly Gly Arg Arg Ala
1   5   10   15

Ala Ala Pro Glu Arg Gly Lys Gly Gly Pro Asp Gly Ala Ser Ser Gln
            20   25   30

Pro Glu Asp Ala Ser Gly Arg Cys Ala Gln Arg Phe Ser Thr Leu Phe
            35   40   45

Ser Glu Leu Ala Val Arg Met Val Phe Ser Val Arg Gln Cys Gly His
    50   55   60

Val Gly Arg Thr Glu Glu Val Leu Leu Thr Phe Lys Ile Phe Leu Val

Ile Ile Cys Leu His Val Val Leu Val Thr Ser Leu Glu Glu Asp Thr
            85   90   95

Asp Asn Ser Ser Leu Ser Pro Pro Pro Ala Lys Leu Ser Val Val Ser
            100   105   110

Phe Ala Pro Ser Ser Asn Gly Thr Pro Asp Val Thr Leu Ser Leu Leu
            115   120   125

Pro Ser Asn Glu Thr Gly Val Lys Pro Gln Arg Asn Ile Cys Asn Leu
    130   135   140

Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe Arg Gly Glu Ile Met Phe
145   150   155   160

Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln Asn Gln His Ile Thr Asn
            165   170   175

Gly Thr Leu Thr Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu
            180   185   190

Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Met Cys
    195   200   205

Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn Cys Thr Phe Thr Ile Lys
    210   215   220

Leu Asn Asn Thr Met Asn Ala Cys Ala Ala Ile Ala Ala Leu Glu Arg
225   230   235   240

Val Lys Ile Arg Pro Met Glu His Cys Cys Cys Ser Val Arg Ile Pro
            245   250   255

Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys Leu Gln Cys Asp Leu Gln
            260   265   270

Asp Pro Ile Val Cys Leu Ala Asp His Pro Arg Gly Pro Pro Phe Ser
            275   280   285

Ser Ser Gln Ser Ile Pro Val Val Pro Arg Ala Thr Val Leu Ser Gln
    290   295   300

Val Pro Lys Ala Thr Ser Phe Ala Glu Pro Pro Asp Tyr Ser Pro Val
305   310   315   320

Thr His Asn Val Pro Ser Pro Ile Gly Glu Ile Gln Pro Leu Ser Pro
            325   330   335

Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro Ala Ile Asp Met Pro Pro
            340   345   350

Gln Ser Glu Thr Ile Ser Ser Pro Met Pro Gln Thr His Val Ser Gly
        355   360   365

Thr Pro Pro Pro Val Lys Ala Ser Phe Ser Ser Pro Thr Val Ser Ala
    370   375   380

Pro Ala Asn Val Asn Thr Thr Ser Ala Pro Pro Val Gln Thr Asp Ile
385   390   395   400

Val Asn Thr Ser Ser Ile Ser Asp Leu Glu Asn Gln Val Leu Gln Met
                405   410   415

Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu
            420   425   430

Met Ile Asn Gln Val Ser Arg Leu Leu His Ser Pro Pro Asp Met Leu
        435   440   445

Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Asp Ile Gly Leu
    450   455   460

Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu
465   470   475   480

Ala Leu Ala Val Ile Arg Val Asn Ala Ser Ser Phe Asn Thr Thr Thr
            485   490   495

Phe Val Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Thr Gln
            500   505   510

Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr Leu Pro Ser Ser Leu Met
            515   520   525

Asn Asn Leu Pro Ala His Asp Met Glu Leu Ala Ser Arg Val Gln Phe
    530   535   540

Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn
545   550   555   560

Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Ala Asn Leu Thr
                565   570   575

Val Arg Asn Leu Thr Arg Asn Val Thr Val Thr Leu Lys His Ile Asn
            580   585   590

Pro Ser Gln Asp Glu Leu Thr Val Arg Cys Val Phe Trp Asp Leu Gly
        595   600   605

Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp Asn Gly Cys Ser Val Lys
    610   615   620

Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser
625   630   635   640

Phe Gly Val Leu Leu Asp Leu Ser Arg Thr Ser Val Leu Pro Ala Gln
            645   650   655

Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser
            660   665   670

Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile
        675   680   685

Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu
    690   695   700

Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr
705   710   715   720

Lys Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe
            725   730   735

Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr
            740   745   750

```
Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu
        755             760             765

Lys Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val Thr Ile
    770             775             780

Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys
785             790             795             800

Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala
            805             810             815

Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu
        820             825             830

Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys
        835             840             845

Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu
    850             855             860

Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe
865             870             875             880

Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe
            885             890             895

Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys
        900             905             910

Val Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys
        915             920             925

Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr
    930             935             940

Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser
945             950             955             960

Asn Ser Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu
            965             970             975

Val Asn Asn Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser
```

Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys
        995   1000   1005

Leu His Asp Phe Thr Gly Lys Gln His Met Phe Asn Glu Lys Glu
    1010   1015   1020

Asp Ser Cys Asn Gly Lys Gly Arg Met Ala Leu Arg Arg Thr Ser
    1025   1030   1035

Lys Arg Gly Ser Leu His Phe Ile Glu Gln Met
    1040   1045

<210> 47
<211> 995
<212> PRT
<213> Homo sapiens

<400> 47

Met Val Phe Ser Val Arg Gln Cys Gly His Val Gly Arg Thr Glu Glu
1   5.   10   15

Val Leu Leu Thr Phe Lys Ile Phe Leu Val Ile Ile Cys Leu His Val
        20   25   30

Val Leu Val Thr Ser Leu Glu Glu Asp Thr Asp Asn Ser Ser Leu Ser
        35   40   45

Pro Pro Pro Ala Lys Leu Ser Val Val Ser Phe Ala Pro Ser Ser Asn
    50   55   60

Gly Thr Pro Asp Val Thr Leu Ser Leu Leu Pro Ser Asn Glu Thr Gly
65   70   75   80

Val Lys Pro Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Asn Asp
            85   90   95

Ser Ala Phe Phe Arg Gly Glu Ile Met Phe Gln Tyr Asp Lys Glu Ser
        100   105   110

Thr Val Pro Gln Asn Gln His Ile Thr Asn Gly Thr Leu Thr Gly Val
    115   120   125

121

```
Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln
    130             135             140

Thr Leu Ser Glu Thr Tyr Phe Ile Met Cys Ala Thr Ala Glu Ala Gln
145             150             155             160

Ser Thr Leu Asn Cys Thr Phe Thr Ile Lys Leu Asn Asn Thr Met Asn
                165             170             175

Ala Cys Ala Ala Ile Ala Ala Leu Glu Arg Val Lys Ile Arg Pro Met
            180             185             190

Glu His Cys Cys Cys Ser Val Arg Ile Pro Cys Pro Ser Ser Pro Glu
        195             200             205

Glu Leu Gly Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu
    210             215             220

Ala Asp His Pro Arg Gly Pro Pro Phe Ser Ser Ser Gln Ser Ile Pro
225             230             235             240

Val Val Pro Arg Ala Thr Val Leu Ser Gln Val Pro Lys Ala Thr Ser
            245             250             255

Phe Ala Glu Pro Pro Asp Tyr Ser Pro Val Thr His Asn Val Pro Ser
            260             265             270       .

Pro Ile Gly Glu Ile Gln Pro Leu Ser Pro Gln Pro Ser Ala Pro Ile
            275             280             285

Ala Ser Ser Pro Ala Ile Asp Met Pro Pro Gln Ser Glu Thr Ile Ser
    290             295             300

Ser Pro Met Pro Gln Thr His Val Ser Gly Thr Pro Pro Pro Val Lys
305             310             315             320

Ala Ser Phe Ser Ser Pro Thr Val Ser Ala Pro Ala Asn Val Asn Thr
            325             330             335

Thr Ser Ala Pro Pro Val Gln Thr Asp Ile Val Asn Thr Ser Ser Ile
            340             345             350
```

Ser Asp Leu Glu Asn Gln Val Leu Gln Met Glu Lys Ala Leu Ser Leu
        355   360   365

Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met Ile Asn Gln Val Ser
        370   375   380

Arg Leu Leu His Ser Pro Pro Asp Met Leu Ala Pro Leu Ala Gln Arg
385   390   395   400

Leu Leu Lys Val Val Asp Asp Ile Gly Leu Gln Leu Asn Phe Ser Asn
            405   410   415

Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg
            420   425   430

Val Asn Ala Ser Ser Phe Asn Thr Thr Thr Phe Val Ala Gln Asp Pro
        435   440   445

Ala Asn Leu Gln Val Ser Leu Glu Thr Gln Ala Pro Glu Asn Ser Ile
    450   455   460

Gly Thr Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala His
465   470   475   480

Asp Met Glu Leu Ala Ser Arg Val Gln Phe Asn Phe Phe Glu Thr Pro
            485   490   495

Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile Ser Tyr
        500   505   510

Val Ile Ser Ser Ser Val Ala Asn Leu Thr Val Arg Asn Leu Thr Arg
        515   520   525

Asn Val Thr Val Thr Leu Lys His Ile Asn Pro Ser Gln Asp Glu Leu
    530   535   540

Thr Val Arg Cys Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Arg Gly
545   550   555   560

Gly Trp Ser Asp Asn Gly Cys Ser Val Lys Asp Arg Arg Leu Asn Glu
            565   570   575

Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe Gly Val Leu Leu Asp

```
                580                      585                      590

Leu Ser Arg Thr Ser Val Leu Pro Ala Gln Met Met Ala Leu Thr Phe
    595                 600                 605

Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr
    610                 615                 620

Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser
625                 630                 635                     640

Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Asn Leu Val
                645                 650                 655

Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Lys Met Gln Gly Leu Cys
            660                 665                 670

Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr
        675                 680                 685

Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val
    690                 695                 700

Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly
705                 710                 715                     720

Trp Gly Val Pro Ala Val Val Val Thr Ile Ile Leu Thr Ile Ser Pro
            725                 730                 735

Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys Phe Pro Asn Gly Ser Pro
            740                 745                 750

Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala Val Phe Tyr Ile Thr Val
        755                 760                 765

Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile
    770                 775                 780

Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln Leu Gly
785                 790                 795                     800

Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu
            805                 810                 815
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Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly
            820             825             830

Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu
            835             840             845

Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Val Ala Lys Glu Asn Val
    850             855             860

Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala
865             870             875             880

Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln
            885             890             895

Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser
            900             905             910

Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Asn Asp Cys Ser
            915             920             925

Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn Gly Val
    930             935             940

Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu His Asp Phe Thr Gly
945             950             955             960

Lys Gln His Met Phe Asn Glu Lys Glu Asp Ser Cys Asn Gly Lys Gly
            965             970             975

Arg Met Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu His Phe Ile
            980             985             990

Glu Gln Met
        995


<210>   48
<211>   1071
<212>   PRT
<213>   Homo sapiens

<400>   48
```

```
Gly Ser Gly Gly Gly Gly Ala Glu Ala Ala Gly Gly Gly Arg Arg Ala
1           5               10          15

Ala Ala Pro Glu Arg Gly Lys Gly Gly Pro Asp Gly Ala Ser Ser Gln
        20          25          30

Pro Glu Asp Ala Ser Gly Arg Cys Ala Gln Arg Phe Ser Thr Leu Phe
        35          40          45

Ser Glu Leu Ala Val Arg Met Val Phe Ser Val Arg Gln Cys Gly His
    50          55          60

Val Gly Arg Thr Glu Glu Val Leu Leu Thr Phe Lys Ile Phe Leu Val
65          70          75          80

Ile Ile Cys Leu His Val Val Leu Val Thr Ser Leu Glu Glu Asp Thr
            85          90          95

Asp Asn Ser Ser Leu Ser Pro Pro Ala Lys Leu Ser Val Val Ser
        100         105         110

Phe Ala Pro Ser Ser Asn Gly Thr Pro Glu Val Glu Thr Thr Ser Leu
        115         120         125

Asn Asp Val Thr Leu Ser Leu Leu Pro Ser Asn Glu Thr Glu Lys Thr
        130         135         140

Lys Ile Thr Ile Val Lys Thr Phe Asn Ala Ser Gly Val Lys Pro Gln
145             150         155             160

Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Asn Asp Ser Ala Phe Phe
            165             170         175

Arg Gly Glu Ile Met Phe Gln Tyr Asp Lys Glu Ser Thr Val Pro Gln
        180             185         190

Asn Gln His Ile Thr Asn Gly Thr Leu Thr Gly Val Leu Ser Leu Ser
        195         200         205

Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu
    210         215         220

Thr Tyr Phe Ile Met Cys Ala Thr Ala Glu Ala Gln Ser Thr Leu Asn
```

225   230   235   240

Cys Thr Phe Thr Ile Lys Leu Asn Asn Thr Met Asn Ala Cys Ala Ala
                245   250   255

Ile Ala Ala Leu Glu Arg Val Lys Ile Arg Pro Met Glu His Cys Cys
            260   265   270

Cys Ser Val Arg Ile Pro Cys Pro Ser Ser Pro Glu Glu Leu Gly Lys
            275   280   285

Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu Ala Asp His Pro
    290   295   300

Arg Gly Pro Pro Phe Ser Ser Ser Gln Ser Ile Pro Val Val Pro Arg
305   310   315   320

Ala Thr Val Leu Ser Gln Val Pro Lys Ala Thr Ser Phe Ala Glu Pro
            325   330   335

Pro Asp Tyr Ser Pro Val Thr His Asn Val Pro Ser Pro Ile Gly Glu
            340   345   350

Ile Gln Pro Leu Ser Pro Gln Pro Ser Ala Pro Ile Ala Ser Ser Pro
    355   360   365   .

Ala Ile Asp Met Pro Pro Gln Ser Glu Thr Ile Ser Ser Pro Met Pro
    370   375   380

Gln Thr His Val Ser Gly Thr Pro Pro Pro Val Lys Ala Ser Phe Ser
385   390   395   400

Ser Pro Thr Val Ser Ala Pro Ala Asn Val Asn Thr Thr Ser Ala Pro
            405   410   415

Pro Val Gln Thr Asp Ile Val Asn Thr Ser Ser Ile Ser Asp Leu Glu
            420   425   430

Asn Gln Val Leu Gln Met Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu
            435   440   445

Pro Asn Leu Ala Gly Glu Met Ile Asn Gln Val Ser Arg Leu Leu His
    450   455   460

127

Ser Pro Pro Asp Met Leu Ala Pro Leu Ala Gln Arg Leu Leu Lys Val
465   470   475   480

Val Asp Asp Ile Gly Leu Gln Leu Asn Phe Ser Asn Thr Thr Ile Ser
                485   490   495

Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn Ala Ser
            500   505   510

Ser Phe Asn Thr Thr Thr Phe Val Ala Gln Asp Pro Ala Asn Leu Gln
        515   520   525

Val Ser Leu Glu Thr Gln Ala Pro Glu Asn Ser Ile Gly Thr Ile Thr
    530   535   540

Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala His Asp Met Glu Leu
545   550   555   560

Ala Ser Arg Val Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln
            565   570   575

Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser
        580   585   .   590

Ser Val Ala Asn Leu Thr Val Arg Asn Leu Thr Arg Asn Val Thr Val
    595   600   605 ˎ

Thr Leu Lys His Ile Asn Pro Ser Gln Asp Glu Leu Thr Val Arg Cys
    610   615   620
                                    .

Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Arg Gly Gly Trp Ser Asp
625   630   635   640

Asn Gly Cys Ser Val Lys Asp Arg Arg Leu Asn Glu Thr Ile Cys Thr
            645   650   655

Cys Ser His Leu Thr Ser Phe Gly Val Leu Leu Asp Leu Ser Arg Thr
        660   665   670

Ser Val Leu Pro Ala Gln Met Met Ala Leu Thr Phe Ile Thr Tyr Ile
    675   680   685

```
Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val Thr Tyr
    690             695             700

Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile
705             710             715                         720

Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Val Phe Leu Leu Asp
                725             730                         735

Ser Trp Ile Ala Leu Tyr Lys Met Gln Gly Leu Cys Ile Ser Val Ala
            740             745             750

Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met Gly Leu
        755             760             765

Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn Thr Tyr
    770             775             780

Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Val Pro
785             790             795                         800

Ala Val Val Val Thr Ile Ile Leu Thr Ile Ser Pro Asp Asn Tyr Gly
            805             810             815

Leu Gly Ser Tyr Gly Lys Phe Pro Asn Gly Ser Pro Asp Asp Phe Cys
        820             825             830

Trp Ile Asn Asn Asn Ala Val Phe Tyr Ile Thr Val Val Gly Tyr Phe
        835             840             845

Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val Leu Val
    850             855             860

Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys
865             870             875                         880

Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu
            885             890                         895

Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val Asn Val
        900             905             910
```

Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe
        915   920   925

Ile Phe Ile Phe Tyr Cys Val Ala Lys Glu Asn Val Arg Lys Gln Trp
    930   935   940

Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp
945   950   955   960

Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val Asn Gln
                965   970   975

Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Ser Asn Ser Thr
                980   985   990

Asn Ser Thr Thr Leu Leu Val Asn Asn Asp Cys Ser Val His Ala Ser
        995   1000   1005

Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe Ser
    1010   1015   1020

Val Gln Asn Gly Asp Val Cys Leu His Asp Phe Thr Gly Lys Gln
    1025   1030   1035

His Met Phe Asn Glu Lys Glu Asp Ser Cys Asn Gly Lys Gly Arg
    1040   1045   1050

Met Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu His Phe Ile
    1055   1060   1065

Glu Gln Met
    1070

<210>   49
<211>   1032
<212>   PRT
<213>   Homo sapiens

<400>   49

Gln Pro Val Thr Gly Thr Arg Arg Cys Thr Arg Ser Phe Leu Pro Ile
1   5   10   15

Ser Ser Glu Leu Pro Val Arg Met Leu Phe Ser Gly Gly Gln Tyr Ser
        20   25   30

```
Pro Val Gly Arg Pro Glu Glu Val Leu Leu Ile Tyr Lys Ile Phe Leu
        35              40                  45

Val Ile Ile Cys Phe His Val Ile Leu Val Thr Ser Leu Lys Glu Asn
        50              55                  60

Gly Asn Ser Ser Leu Leu Ser Pro Ser Ala Glu Ser Ser Leu Val Ser
65                  70                  75                      80

Leu Ile Pro Tyr Ser Asn Gly Thr Pro Asp Ala Ala Ser Glu Val Leu
                85              90                  95

Ser Thr Leu Asn Lys Thr Glu Lys Ser Lys Ile Thr Ile Val Lys Thr
            100             105             110

Phe Asn Ala Ser Gly Val Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser
        115             120             125

Ser Leu Cys Asn Asp Ser Val Phe Phe Arg Gly Glu Ile Val Phe Gln
    130             135             140

His Asp Glu Asp His Asn Val Thr Gln Asn Gln Asp Thr Ala Asn Gly
145             150             155             160

Thr Phe Ala Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu Leu
            165             170             175

Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala
        180             185             190

Thr Ala Glu Ala Gln Ser Thr Val Asn Cys Thr Phe Thr Val Lys Leu
        195             200             205

Asn Glu Thr Met Asn Val Cys Ala Met Met Val Thr Phe Gln Thr Val
210             215             220

Gln Ile Arg Pro Met Glu Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys
225             230             235             240

Pro Ser Ser Pro Glu Glu Leu Glu Lys Leu Gln Cys Glu Leu Gln Asp
            245             250             255
```

131

Pro Ile Val Cys Leu Ala Asp Gln Pro His Gly Pro Pro Leu Ser Ser
            260   265   270

Ser Ser Lys Pro Val Val Pro Gln Ala Thr Ile Ile Ser His Val Ala
        275   280   285

Ser Asp Phe Ser Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Pro
    290   295   300

Ser Thr Pro Ser Leu Thr Gln Glu Ser Asn Leu Pro Ser Pro Gln Pro
305   310   315   320

Thr Ile Pro Leu Ala Ser Ser Pro Ala Thr Asp Leu Pro Val Gln Ser
            325   330   335

Val Val Val Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu Ser
            340   345   350

Pro Val Gln Ser Ser Ile Pro Ser Pro Thr Thr Pro Ala Pro Ser Val
        355   360   365

Pro Thr Glu Leu Val Thr Ile Ser Thr Pro Pro Gly Glu Thr Val Val
    370   375   380

Asn Thr Ser Thr Val Ser Asp Leu Glu Ala Gln Val Ser Gln Met Glu
385   390   395   400

Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met
            405   410   415

Val Asn Arg Val Ser Lys Leu Leu His Ser Pro Pro Ala Leu Leu Ala
        420   425   430

Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu Gln
        435   440   445

Leu Asn Phe Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala
    450   455   460

Leu Ala Val Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr Phe
465   470   475   480

```
Ala Ala Gln Asp Pro Thr Asn Leu Gln Val Ser Leu Glu Thr Pro Pro
            485             490                 495

Pro Glu Asn Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met Asn
            500             505             510

Asn Leu Pro Ala Asn Asp Val Glu Leu Ala Ser Arg Ile Gln Phe Asn
            515             520             525

Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu
    530             535             540

Thr Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr Ile
545             550             555             560

Lys Asn Leu Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn Pro
            565             570             575

Ser Pro Asp Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Gly Arg
            580             585             590

Asn Gly Gly Lys Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys Asp
            595             600             605

Lys Arg Met Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe
    610             615             620

Gly Ile Leu Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln Met
625             630             635             640

Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile
            645             650             655

Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg
            660             665             670

Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu
            675             680             685

Leu Leu Asn Leu Ile Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Asn
    690             695             700

Thr Arg Gly Phe Cys Ile Ala Val Ala Val Phe Leu His Tyr Phe Leu
```

Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu
            725   730   735

Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys
            740   745   750

Phe Cys Ile Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile Val
            755   760   765

Leu Thr Ile Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys Phe
    770   775   780

Pro Asn Gly Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Asn Val Val
785   790   795   800

Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn
            805   810   815

Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys
        820   825   830

Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg
        835   840   845

Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala
    850   855   860

Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala
865   870   875   880

Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Ala
            885   890   895

Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly
        900   905   910

Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn
        915   920   925

Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn
    930   935   940

134

```
Ser Leu Gln Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu Val
945             950             955             960

Asn Ser Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr
            965             970             975

Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu
        980             985             990

His Asp Leu Thr Gly Lys Gln His  Met Phe Ser Asp Lys  Glu Asp Ser
        995             1000            1005

Cys Asn  Gly Lys Ser Arg Ile  Ala Leu Arg Arg Thr  Ser Lys Arg
    1010            1015            1020

Gly Ser  Leu His Phe Ile Glu  Gln Met
    1025            1030
```

<210> 50
<211> 1016
<212> PRT
<213> Homo sapiens

<400> 50

```
Gln Pro Val Thr Gly Thr Arg Arg Cys Thr Arg Ser Phe Leu Pro Ile
1               5               10              15

Ser Ser Glu Leu Pro Val Arg Met Leu Phe Ser Gly Gly Gln Tyr Ser
            20              25              30

Pro Val Gly Arg Pro Glu Glu Val Leu Leu Ile Tyr Lys Ile Phe Leu
        35              40              45

Val Ile Ile Cys Phe His Val Ile Leu Val Thr Ser Leu Lys Glu Asn
    50              55              60

Gly Asn Ser Ser Leu Leu Ser Pro Ser Asp Ala Ala Ser Glu Val Leu
65              70              75              80

Ser Thr Leu Asn Lys Thr Glu Lys Ser Lys Ile Thr Ile Val Lys Thr
                85              90              95
```

```
Phe Asn Ala Ser Gly Val Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser
            100                 105                 110

Ser Leu Cys Asn Asp Ser Val Phe Phe Arg Gly Glu Ile Val Phe Gln
            115                 120                 125

His Asp Glu Asp His Asn Val Thr Gln Asn Gln Asp Thr Ala Asn Gly
    130                 135                 140

Thr Phe Ala Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu Leu
145                 150                 155                 160

Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala
                165                 170                 175

Thr Ala Glu Ala Gln Ser Thr Val Asn Cys Thr Phe Thr Val Lys Leu
            180                 185                 190

Asn Glu Thr Met Asn Val Cys Ala Met Met Val Thr Phe Gln Thr Val
            195                 200                 205

Gln Ile Arg Pro Met Glu Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys
    210                 215                 220

Pro Ser Ser Pro Glu Glu Leu Glu Lys Leu Gln Cys Glu Leu Gln Asp
225                 230                 235                 240

Pro Ile Val Cys Leu Ala Asp Gln Pro His Gly Pro Pro Leu Ser Ser
                245                 250                 255

Ser Ser Lys Pro Val Val Pro Gln Ala Thr Ile Ile Ser His Val Ala
            260                 265                 270

Ser Asp Phe Ser Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Pro
            275                 280                 285

Ser Thr Pro Ser Leu Thr Gln Glu Ser Asn Leu Pro Ser Pro Gln Pro
    290                 295                 300

Thr Ile Pro Leu Ala Ser Ser Pro Ala Thr Asp Leu Pro Val Gln Ser
305                 310                 315                 320

Val Val Val Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu Ser
```

```
                    325                     330                      335

Pro Val Gln Ser Ser Ile Pro Ser Pro Thr Thr Pro Ala Pro Ser Val
            340                 345                 350

Pro Thr Glu Leu Val Thr Ile Ser Thr Pro Pro Gly Glu Thr Val Val
        355                 360                 365

Asn Thr Ser Thr Val Ser Asp Leu Glu Ala Gln Val Ser Gln Met Glu
    370                 375                 380

Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met
385                 390                 395                 400

Val Asn Arg Val Ser Lys Leu Leu His Ser Pro Pro Ala Leu Leu Ala
            405                 410                 415

Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu Gln
        420                 425                 430

Leu Asn Phe Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala
        435                 440                 445

Leu Ala Val Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr Phe
    450                 455                 460

Ala Ala Gln Asp Pro Thr Asn Leu Gln Val Ser Leu Glu Thr Pro Pro
465                 470                 475                 480

Pro Glu Asn Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met Asn
                485                 490                 495

Asn Leu Pro Ala Asn Asp Val Glu Leu Ala Ser Arg Ile Gln Phe Asn
        500                 505                 510

Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu
        515                 520                 525

Thr Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr Ile
    530                 535                 540

Lys Asn Leu Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn Pro
545                 550                 555                 560
```

```
Ser Pro Asp Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Gly Arg
            565             570             575

Asn Gly Gly Lys Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys Asp
            580             585             590

Lys Arg Met Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe
        595             600             605

Gly Ile Leu Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln Met
    610             615             620

Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile
625             630             635                     640

Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg
            645             650             655

Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu
            660             665             670

Leu Leu Asn Leu Ile Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Asn
            675             680             685

Thr Arg Gly Phe Cys Ile Ala Val Ala Val Phe Leu His Tyr Phe Leu
    690             695             700

Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu
705             710             715             720

Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys
            725             730             735

Phe Cys Ile Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile Val
            740             745             750

Leu Thr Ile Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys Phe
    755             760             765

Pro Asn Gly Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Asn Val Val
    770             775             780
```

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```
Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn
785             790             795             800

Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys
            805             810             815

Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg
            820             825             830

Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala
        835             840             845

Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala
    850             855             860

Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Ala
865             870             875             880

Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly
            885             890             895

Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn
        900             905             910

Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn
        915             920             925

Ser Leu Gln Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu Val
    930             935             940

Asn Ser Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr
945             950             955             960

Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu
            965             970             975

His Asp Leu Thr Gly Lys Gln His Met Phe Ser Asp Lys Glu Asp Ser
        980             985             990

Cys Asn Gly Lys Ser Arg Ile Ala  Leu Arg Arg Thr Ser  Lys Arg Gly
        995             1000            1005
```

Ser Leu His Phe Ile Glu Gln Met
    1010   1015

<210> 51
<211> 993
<212> PRT
<213> Homo sapiens

<400> 51

Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg Pro Glu Glu
1   5   10   15

Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys Phe His Val
            20   25   30

Ile Leu Val Thr Ser Leu Lys Glu Asn Gly Asn Ser Ser Leu Leu Ser
            35   40   45

Pro Ser Asp Ala Ala Ser Glu Val Leu Ser Thr Leu Asn Lys Thr Glu
    50   55   60

Lys Ser Lys Ile Thr Ile Val Lys Thr Phe Asn Ala Ser Gly Val Lys
65   70   75   80

Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Leu Cys Asn Asp Ser Val
            85   90   95

Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp Glu Asp His Asn Val
            100   105   110

Thr Gln Asn Gln Asp Thr Ala Asn Gly Thr Phe Ala Gly Val Leu Ser
    115   120   125

Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu
    130   135   140

Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala Glu Ala Gln Ser Thr
145   150   155   160

Val Asn Cys Thr Phe Thr Val Lys Leu Asn Glu Thr Met Asn Val Cys
            165   170   175

Ala Met Met Val Thr Phe Gln Thr Val Gln Ile Arg Pro Met Glu Gln
            180   185   190

140

Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser Ser Pro Glu Glu Leu
        195   200   205

Glu Lys Leu Gln Cys Glu Leu Gln Asp Pro Ile Val Cys Leu Ala Asp
    210   215   220

Gln Pro His Gly Pro Pro Leu Ser Ser Ser Ser Lys Pro Val Val Pro
225   230   235   240

Gln Ala Thr Ile Ile Ser His Val Ala Ser Asp Phe Ser Leu Ala Glu
            245   250   255

Pro Leu Asp His Ala Leu Met Thr Pro Ser Thr Pro Ser Leu Thr Gln
        260   265   270

Glu Ser Asn Leu Pro Ser Pro Gln Pro Thr Ile Pro Leu Ala Ser Ser
    275   280   285

Pro Ala Thr Asp Leu Pro Val Gln Ser Val Val Val Ser Ser Leu Pro
    290   295   300

Gln Thr Asp Leu Ser His Thr Leu Ser Pro Val Gln Ser Ser Ile Pro
305   310   315   320

Ser Pro Thr Thr Pro Ala Pro Ser Val Pro Thr Glu Leu Val Thr Ile
        325   330   335

Ser Thr Pro Pro Gly Glu Thr Val Val Asn Thr Ser Thr Val Ser Asp
        340   345   350

Leu Glu Ala Gln Val Ser Gln Met Glu Lys Ala Leu Ser Leu Gly Ser
    355   360   365

Leu Glu Pro Asn Leu Ala Gly Glu Met Val Asn Arg Val Ser Lys Leu
    370   375   380

Leu His Ser Pro Pro Ala Leu Leu Ala Pro Leu Ala Gln Arg Leu Leu
385   390   395   400

Lys Val Val Asp Ala Ile Gly Leu Gln Leu Asn Phe Ser Ser Thr Thr
            405   410   415

                                                                141

```
Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn
        420         425             430

Ala Ser Asn Phe Asn Thr Thr Thr Phe Ala Ala Gln Asp Pro Thr Asn
        435         440             445

Leu Gln Val Ser Leu Glu Thr Pro Pro Pro Glu Asn Ser Ile Gly Ala
    450             455             460

Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu Pro Ala Asn Asp Val
465             470             475             480

Glu Leu Ala Ser Arg Ile Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu
            485             490             495

Phe Gln Asp Pro Ser Leu Glu Asn Leu Thr Leu Ile Ser Tyr Val Ile
        500             505             510

Ser Ser Ser Val Thr Asn Met Thr Ile Lys Asn Leu Thr Arg Asn Val
        515             520             525

Thr Val Ala Leu Lys His Ile Asn Pro Ser Pro Asp Asp Leu Thr Val
    530             535             540

Lys Cys Val Phe Trp Asp Leu Gly Arg Asn Gly Gly Lys Gly Gly Trp
545             550             555             560

Ser Ser Asp Gly Cys Ser Val Lys Asp Lys Arg Met Asn Glu Thr Ile
            565             570             575

Cys Thr Cys Ser His Leu Thr Ser Phe Gly Ile Leu Leu Asp Leu Ser
        580             585             590

Arg Thr Ser Leu Pro Pro Ser Gln Met Met Ala Leu Thr Phe Ile Thr
        595             600             605

Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val
    610             615             620

Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile
625             630             635             640
```

Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Ile Phe Leu
                645   650   655

Leu Asp Ser Trp Ile Ala Leu Tyr Asn Thr Arg Gly Phe Cys Ile Ala
            660   665   670

Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met
        675   680   685

Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn
    690   695   700

Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly
705   710   715   720

Ile Pro Ala Val Val Val Ser Ile Val Leu Thr Ile Ser Pro Asp Asn
            725   730   735

Tyr Gly Ile Gly Ser Tyr Gly Lys Phe Pro Asn Gly Thr Pro Asp Asp
        740   745   750

Phe Cys Trp Ile Asn Ser Asn Val Val Phe Tyr Ile Thr Val Val Gly
    755   760   765

Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val
    770   775   780

Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Gln Leu Gly Ala Gln
785   790   795   800

Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe
            805   810   815

Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val
        820   825   830

Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly
        835   840   845

Phe Phe Ile Phe Ile Phe Tyr Cys Ala Ala Lys Glu Asn Val Arg Lys
    850   855   860

Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn

Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val
                885   890   895

Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Cys Asn
                900   905   910

Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Ser Asp Cys Ser Val His
                915   920   925

Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe
        930   935   940

Ser Val Gln Asn Gly Asp Val Cys Leu His Asp Leu Thr Gly Lys Gln
945   950   955   960

His Met Phe Ser Asp Lys Glu Asp Ser Cys Asn Gly Lys Ser Arg Ile
                965   970   975

Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu His Phe Ile Glu Gln
                980   985   990

Met

<210> 52
<211> 1029
<212> PRT
<213> Homo sapiens

<400> 52

Gln Pro Val Thr Gly Thr Arg Arg Cys Thr Arg Ser Phe Leu Pro Ile
1   5   10   15

Ser Ser Glu Leu Pro Val Arg Met Leu Phe Ser Gly Gly Gln Tyr Ser
            20   25   30

Pro Val Gly Arg Pro Glu Glu Val Leu Leu Ile Tyr Lys Ile Phe Leu
        35   40   45

Val Ile Ile Cys Phe His Val Ile Leu Val Thr Ser Leu Lys Glu Asn
    50   55   60

144

```
Gly Asn Ser Ser Leu Leu Ser Pro Ser Ala Glu Ser Ser Leu Val Ser
65              70              75                      80

Leu Ile Pro Tyr Ser Asn Asp Ala Ala Ser Glu Val Leu Ser Thr Leu
                85              90                      95

Asn Lys Thr Glu Lys Ser Lys Ile Thr Ile Val Lys Thr Phe Asn Ala
            100             105             110

Ser Gly Val Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Leu Cys
        115             120             125

Asn Asp Ser Val Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp Glu
    130             135             140

Asp His Asn Val Thr Gln Asn Gln Asp Thr Ala Asn Gly Thr Phe Ala
145             150             155             160

Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys Thr
            165             170             175

Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala Glu
        180             185             190

Ala Gln Ser Thr Val Asn Cys Thr Phe Thr Val Lys Leu Asn Glu Thr
    195             200             205

Met Asn Val Cys Ala Met Met Val Thr Phe Gln Thr Val Gln Ile Arg
    210             215             220

Pro Met Glu Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser Ser
225             230             235             240

Pro Glu Glu Leu Glu Lys Leu Gln Cys Glu Leu Gln Asp Pro Ile Val
            245             250             255

Cys Leu Ala Asp Gln Pro His Gly Pro Pro Leu Ser Ser Ser Ser Lys
            260             265             270

Pro Val Val Pro Gln Ala Thr Ile Ile Ser His Val Ala Ser Asp Phe
        275             280             285
```

```
Ser Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Pro Ser Thr Pro
    290             295             300

Ser Leu Thr Gln Glu Ser Asn Leu Pro Ser Pro Gln Pro Thr Ile Pro
305             310             315             320

Leu Ala Ser Ser Pro Ala Thr Asp Leu Pro Val Gln Ser Val Val Val
            325             330             335

Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu Ser Pro Val Gln
            340             345             350

Ser Ser Ile Pro Ser Pro Thr Thr Pro Ala Pro Ser Val Pro Thr Glu
            355             360             365

Leu Val Thr Ile Ser Thr Pro Pro Gly Glu Thr Val Val Asn Thr Ser
    370             375             380

Thr Val Ser Asp Leu Glu Ala Gln Val Ser Gln Met Glu Lys Ala Leu
385             390             395             400

Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met Val Asn Arg
            405             410             415

Val Ser Lys Leu Leu His Ser Pro Pro Ala Leu Leu Ala Pro Leu Ala
            420             425             430

Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu Gln Leu Asn Phe
        435             440             445

Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val
    450             455             460

Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr Phe Ala Ala Gln
465             470             475             480

Asp Pro Thr Asn Leu Gln Val Ser Leu Glu Thr Pro Pro Pro Glu Asn
            485             490             495

Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu Pro
            500             505             510

Ala Asn Asp Val Glu Leu Ala Ser Arg Ile Gln Phe Asn Phe Phe Glu
```

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              515                   520                   525

Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu Thr Leu Ile
    530                 535                 540

Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr Ile Lys Asn Leu
545                 550                 555                     560

Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn Pro Ser Pro Asp
                565                 570                 575

Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Gly Arg Asn Gly Gly
                580                 585                 590

Lys Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys Asp Lys Arg Met
            595                 600                 605

Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe Gly Ile Leu
    610                 615                 620

Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln Met Met Ala Leu
625                 630                 635                     640

Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser
                645                 650                 655

Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr
            660                 665                 670

Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn
            675                 680                 685

Leu Ile Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Asn Thr Arg Gly
    690                 695                 700

Phe Cys Ile Ala Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser
705                 710                 715                     720

Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val
                725                 730                 735

Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile
                740                 745                 750
```

147

```
Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile Val Leu Thr Ile
        755              760              765

Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys Phe Pro Asn Gly
    770              775              780

Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Asn Val Val Phe Tyr•Ile
785              790              795                       800

Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met
                805              810              815

Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln
            820              825              830

Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala
        835              840              845

Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala
    850              855              860

Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn
865              870              875                       880

Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Ala Ala Lys Glu
            885              890              895

Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg
        900              905              910

Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys
        915              920              925

Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Asn Ser Leu Gln
    930              935              940

Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Ser Asp
945              950              955                       960

Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn
            965              970              975
```

```
Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu His Asp Leu
        980                 985                 990


Thr Gly Lys Gln His Met Phe Ser   Asp Lys Glu Asp Ser  Cys Asn Gly
        995             1000               1005


Lys Ser  Arg Ile Ala Leu Arg  Arg Thr Ser Lys Arg  Gly Ser Leu
    1010              1015               1020


His Phe  Ile Glu Gln Met
    1025


<210>  53
<211>  1006
<212>  PRT
<213>  Homo sapiens

<400>  53

Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg Pro Glu Glu
1               5               10              15


Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys Phe His Val
            20              25              30


Ile Leu Val Thr Ser Leu Lys Glu Asn Gly Asn Ser Ser Leu Leu Ser
        35              40              45


Pro Ser Ala Glu Ser Ser Leu Val Ser Leu Ile Pro Tyr Ser Asn Asp
    50              55              60


Ala Ala Ser Glu Val Leu Ser Thr Leu Asn Lys Thr Glu Lys Ser Lys
65              70              75              80


Ile Thr Ile Val Lys Thr Phe Asn Ala Ser Gly Val Lys Ser Gln Arg
                85              90              95


Asn Ile Cys Asn Leu Ser Ser Leu Cys Asn Asp Ser Val Phe Phe Arg
            100             105             110


Gly Glu Ile Val Phe Gln His Asp Glu Asp His Asn Val Thr Gln Asn
        115             120             125


Gln Asp Thr Ala Asn Gly Thr Phe Ala Gly Val Leu Ser Leu Ser Glu
```

```
            130                   135                   140

Leu Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr
145                 150                 155                 160

Tyr Phe Ile Val Cys Ala Thr Ala Glu Ala Gln Ser Thr Val Asn Cys
                165                 170                 175

Thr Phe Thr Val Lys Leu Asn Glu Thr Met Asn Val Cys Ala Met Met
                180                 185                 190

Val Thr Phe Gln Thr Val Gln Ile Arg Pro Met Glu Gln Cys Cys Cys
                195                 200                 205

Ser Pro Arg Thr Pro Cys Pro Ser Ser Pro Glu Glu Leu Glu Lys Leu
    210                 215                 220

Gln Cys Glu Leu Gln Asp Pro Ile Val Cys Leu Ala Asp Gln Pro His
225                 230                 235                 240

Gly Pro Pro Leu Ser Ser Ser Ser Lys Pro Val Val Pro Gln Ala Thr
                245                 250                 255

Ile Ile Ser His Val Ala Ser Asp Phe Ser Leu Ala Glu Pro Leu Asp
                260                 265                 270

His Ala Leu Met Thr Pro Ser Thr Pro Ser Leu Thr Gln Glu Ser Asn
    275                 280                 285

Leu Pro Ser Pro Gln Pro Thr Ile Pro Leu Ala Ser Ser Pro Ala Thr
    290                 295                 300

Asp Leu Pro Val Gln Ser Val Val Val Ser Ser Leu Pro Gln Thr Asp
305                 310                 315                 320

Leu Ser His Thr Leu Ser Pro Val Gln Ser Ser Ile Pro Ser Pro Thr
                325                 330                 335

Thr Pro Ala Pro Ser Val Pro Thr Glu Leu Val Thr Ile Ser Thr Pro
            340                 345                 350

Pro Gly Glu Thr Val Val Asn Thr Ser Thr Val Ser Asp Leu Glu Ala
            355                 360                 365
```

```
Gln Val Ser Gln Met Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro
    370             375             380

Asn Leu Ala Gly Glu Met Val Asn Arg Val Ser Lys Leu Leu His Ser
385             390             395             400

Pro Pro Ala Leu Leu Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val
            405             410             415

Asp Ala Ile Gly Leu Gln Leu Asn Phe Ser Ser Thr Thr Ile Ser Leu
            420             425             430

Thr Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn Ala Ser Asn
        435             440             445

Phe Asn Thr Thr Thr Phe Ala Ala Gln Asp Pro Thr Asn Leu Gln Val
    450             455             460

Ser Leu Glu Thr Pro Pro Pro Glu Asn Ser Ile Gly Ala Ile Thr Leu
465             470             475             480

Pro Ser Ser Leu Met Asn Asn Leu Pro Ala Asn Asp Val Glu Leu Ala
            485             490             495

Ser Arg Ile Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp
        500             505             510

Pro Ser Leu Glu Asn Leu Thr Leu Ile Ser Tyr Val Ile Ser Ser Ser
        515             520             525

Val Thr Asn Met Thr Ile Lys Asn Leu Thr Arg Asn Val Thr Val Ala
    530             535             540

Leu Lys His Ile Asn Pro Ser Pro Asp Asp Leu Thr Val Lys Cys Val
545             550             555             560

Phe Trp Asp Leu Gly Arg Asn Gly Gly Lys Gly Gly Trp Ser Ser Asp
            565             570             575

Gly Cys Ser Val Lys Asp Lys Arg Met Asn Glu Thr Ile Cys Thr Cys
        580             585             590
```

Ser His Leu Thr Ser Phe Gly Ile Leu Leu Asp Leu Ser Arg Thr Ser
        595   600   605

Leu Pro Pro Ser Gln Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly
    610   615   620

Cys Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile
625   630   635   640

Ala Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln
            645   650   655

Leu Cys Ala Ala Leu Leu Leu Leu Asn Leu Ile Phe Leu Leu Asp Ser
        660   665   670

Trp Ile Ala Leu Tyr Asn Thr Arg Gly Phe Cys Ile Ala Val Ala Val
        675   680   685

Phe Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu
    690   695   700

Ala Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile
705   710   715   720

Arg Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Ile Pro Ala
            725   730   735

Val Val Val Ser Ile Val Leu Thr Ile Ser Pro Asp Asn Tyr Gly Ile
            740   745   750

Gly Ser Tyr Gly Lys Phe Pro Asn Gly Thr Pro Asp Asp Phe Cys Trp
        755   760   765

Ile Asn Ser Asn Val Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys
        770   775   780

Val Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val Leu Val Gln
785   790   795   800

Leu Cys Arg Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr
            805   810   815

152

```
Ser Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly
            820                 825             830

Ile Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr
        835             840             845

Phe Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile
    850             855             860

Phe Ile Phe Tyr Cys Ala Ala Lys Glu Asn Val Arg Lys Gln Trp Arg
865             870             875                     880

Arg Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp
            885             890             895

Ser Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly
            900             905             910

Val Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Cys Asn Ser Thr Asn
        915             920             925

Ser Thr Thr Leu Leu Val Asn Ser Asp Cys Ser Val His Ala Ser Gly
    930             935             940

Asn Gly Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln
945             950             955                     960

Asn Gly Asp Val Cys Leu His Asp Leu Thr Gly Lys Gln His Met Phe
            965             970             975

Ser Asp Lys Glu Asp Ser Cys Asn Gly Lys Ser Arg Ile Ala Leu Arg
            980             985             990

Arg Thr Ser Lys Arg Gly Ser Leu  His Phe Ile Glu Gln  Met
            995             1000            1005
```

```
Gln Pro Val Thr Gly Thr Arg Arg Cys Thr Arg Ser Phe Leu Pro Ile
1               5                 10                    15
```

Ser Ser Glu Leu Pro Val Arg Met Leu Phe Ser Gly Gly Gln Tyr Ser
        20   25   30

Pro Val Gly Arg Pro Glu Glu Val Leu Leu Ile Tyr Lys Ile Phe Leu
        35   40   45

Val Ile Ile Cys Phe His Val Ile Leu Val Thr Ser Leu Lys Asp Ala
    50   55   60

Ala Ser Glu Val Leu Ser Thr Leu Asn Lys Thr Glu Lys Ser Lys Ile
65   70   75   80

Thr Ile Val Lys Thr Phe Asn Ala Ser Gly Val Lys Ser Gln Arg Asn
            85   90   95

Ile Cys Asn Leu Ser Ser Leu Cys Asn Asp Ser Val Phe Phe Arg Gly
        100   105   110

Glu Ile Val Phe Gln His Asp Glu Asp His Asn Val Thr Gln Asn Gln
        115   120   125

Asp Thr Ala Asn Gly Thr Phe Ala Gly Val Leu Ser Leu Ser Glu Leu
    130   135   140

Lys Arg Ser Glu Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr
145   150   155   160

Phe Ile Val Cys Ala Thr Ala Glu Ala Gln Ser Thr Val Asn Cys Thr
            165   170   175

Phe Thr Val Lys Leu Asn Glu Thr Met Asn Val Cys Ala Met Met Val
        180   185   190

Thr Phe Gln Thr Val Gln Ile Arg Pro Met Glu Gln Cys Cys Cys Ser
        195   200   205

Pro Arg Thr Pro Cys Pro Ser Ser Pro Glu Glu Leu Glu Lys Leu Gln
    210   215   220

Cys Glu Leu Gln Asp Pro Ile Val Cys Leu Ala Asp Gln Pro His Gly
225   230   235   240

Pro Pro Leu Ser Ser Ser Ser Lys Pro Val Val Pro Gln Ala Thr Ile
            245   250   255

Ile Ser His Val Ala Ser Asp Phe Ser Leu Ala Glu Pro Leu Asp His
            260   265   270

Ala Leu Met Thr Pro Ser Thr Pro Ser Leu Thr Gln Glu Ser Asn Leu
            275   280   285

Pro Ser Pro Gln Pro Thr Ile Pro Leu Ala Ser Ser Pro Ala Thr Asp
    290   295   300

Leu Pro Val Gln Ser Val Val Val Ser Ser Leu Pro Gln Thr Asp Leu
305   310   315   320

Ser His Thr Leu Ser Pro Val Gln Ser Ser Ile Pro Ser Pro Thr Thr
            325   330   335

Pro Ala Pro Ser Val Pro Thr Glu Leu Val Thr Ile Ser Thr Pro Pro
            340   345   350

Gly Glu Thr Val Val Asn Thr Ser Thr Val Ser Asp Leu Glu Ala Gln
            355   360   365

Val Ser Gln Met Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn
    370   375   380

Leu Ala Gly Glu Met Val Asn Arg Val Ser Lys Leu Leu His Ser Pro
385   390   395   400

Pro Ala Leu Leu Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp
            405   410   415

Ala Ile Gly Leu Gln Leu Asn Phe Ser Ser Thr Thr Ile Ser Leu Thr
            420   425   430

Ser Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn Ala Ser Asn Phe
            435   440   445

Asn Thr Thr Thr Phe Ala Ala Gln Asp Pro Thr Asn Leu Gln Val Ser
    450   455   460

155

Leu Glu Thr Pro Pro Pro Glu Asn Ser Ile Gly Ala Ile Thr Leu Pro
465   470   475   480

Ser Ser Leu Met Asn Asn Leu Pro Ala Asn Asp Val Glu Leu Ala Ser
                485   490   495

Arg Ile Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro
            500   505   510

Ser Leu Glu Asn Leu Thr Leu Ile Ser Tyr Val Ile Ser Ser Ser Val
        515   520   525

Thr Asn Met Thr Ile Lys Asn Leu Thr Arg Asn Val Thr Val Ala Leu
    530   535   540

Lys His Ile Asn Pro Ser Pro Asp Asp Leu Thr Val Lys Cys Val Phe
545   550   555   560

Trp Asp Leu Gly Arg Asn Gly Gly Lys Gly Gly Trp Ser Ser Asp Gly
            565   570   575

Cys Ser Val Lys Asp Lys Arg Met Asn Glu Thr Ile Cys Thr Cys Ser
        580   585   590

His Leu Thr Ser Phe Gly Ile Leu Leu Asp Leu Ser Arg Thr Ser Leu
        595   600   605

Pro Pro Ser Gln Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys
    610   615   620

Gly Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala
625   630   635   640

Phe Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu
            645   650   655

Cys Ala Ala Leu Leu Leu Leu Asn Leu Ile Phe Leu Leu Asp Ser Trp
            660   665   670

Ile Ala Leu Tyr Asn Thr Arg Gly Phe Cys Ile Ala Val Ala Val Phe
            675   680   685

Leu His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala

Phe His Met Tyr Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg
705   710   715   720

Lys Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Ile Pro Ala Val
            725   730   735

Val Val Ser Ile Val Leu Thr Ile Ser Pro Asp Asn Tyr Gly Ile Gly
            740   745   750

Ser Tyr Gly Lys Phe Pro Asn Gly Thr Pro Asp Asp Phe Cys Trp Ile
        755   760   765

Asn Ser Asn Val Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val
    770   775   780

Ile Phe Leu Leu Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu
785   790   795   800

Cys Arg Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser
            805   810   815

Ile Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile
        820   825   830

Thr Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe
        835   840   845

Met Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe
    850   855   860

Ile Phe Tyr Cys Ala Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg
865   870   875   880

Tyr Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser
            885   890   895

Lys Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val
        900   905   910

Ser Ser Ser Ser Asn Ser Leu Gln Ser Ser Cys Asn Ser Thr Asn Ser
        915   920   925

Thr Thr Leu Leu Val Asn Ser Asp Cys Ser Val His Ala Ser Gly Asn
    930   935   940

Gly Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn
945   950   955   960

Gly Asp Val Cys Leu His Asp Leu Thr Gly Lys Gln His Met Phe Ser
            965   970   975

Asp Lys Glu Asp Ser Cys Asn Gly Lys Ser Arg Ile Ala Leu Arg Arg
            980   985   990

Thr Ser Lys Arg Gly Ser Leu His Phe Ile Glu Gln Met
        995   1000   1005

<210> 55
<211> 982
<212> PRT
<213> Homo sapiens

<400> 55

Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg Pro Glu Glu
1   5   10   15

Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys Phe His Val
            20   25   30

Ile Leu Val Thr Ser Leu Lys Asp Ala Ala Ser Glu Val Leu Ser Thr
            35   40   45

Leu Asn Lys Thr Glu Lys Ser Lys Ile Thr Ile Val Lys Thr Phe Asn
    50   55   60

Ala Ser Gly Val Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Leu
65   70   75   80

Cys Asn Asp Ser Val Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp
            85   90   95

Glu Asp His Asn Val Thr Gln Asn Gln Asp Thr Ala Asn Gly Thr Phe
            100   105   110

```
Ala Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Ser Glu Leu Asn Lys
        115             120             125

Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala
    130             135             140

Glu Ala Gln Ser Thr Val Asn Cys Thr Phe Thr Val Lys Leu Asn Glu
145             150             155             160

Thr Met Asn Val Cys Ala Met Met Val Thr Phe Gln Thr Val Gln Ile
                165             170             175

Arg Pro Met Glu Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser
            180             185             190

Ser Pro Glu Glu Leu Glu Lys Leu Gln Cys Glu Leu Gln Asp Pro Ile
        195             200             205

Val Cys Leu Ala Asp Gln Pro His Gly Pro Pro Leu Ser Ser Ser Ser
    210             215             220

Lys Pro Val Val Pro Gln Ala Thr Ile Ile Ser His Val Ala Ser Asp
225             230             235             240

Phe Ser Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Pro Ser Thr
            245             250             255

Pro Ser Leu Thr Gln Glu Ser Asn Leu Pro Ser Pro Gln Pro Thr Ile
            260             265             270

Pro Leu Ala Ser Ser Pro Ala Thr Asp Leu Pro Val Gln Ser Val Val
            275             280             285

Val Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu Ser Pro Val
    290             295             300

Gln Ser Ser Ile Pro Ser Pro Thr Thr Pro Ala Pro Ser Val Pro Thr
305             310             315             320

Glu Leu Val Thr Ile Ser Thr Pro Pro Gly Glu Thr Val Val Asn Thr
            325             330             335

Ser Thr Val Ser Asp Leu Glu Ala Gln Val Ser Gln Met Glu Lys Ala
```

```
                340                    345                      350


    Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met Val Asn
            355                 360                 365


    Arg Val Ser Lys Leu Leu His Ser Pro Pro Ala Leu Leu Ala Pro Leu
        370                 375                 380


    Ala Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu Gln Leu Asn
    385                 390                 395                 400


    Phe Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala
                405                 410                 415


    Val Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr Phe Ala Ala
                420                 425                 430


    Gln Asp Pro Thr Asn Leu Gln Val Ser Leu Glu Thr Pro Pro Pro Glu
                435                 440                 445


    Asn Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met Asn Asn Leu
                450                 455                 460


    Pro Ala Asn Asp Val Glu Leu Ala Ser Arg Ile Gln Phe Asn Phe Phe
    465                 470                 475                 480


    Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu Thr Leu
                    485                 490                 495


    Ile Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr Ile Lys Asn
                500                 505                 510


    Leu Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn Pro Ser Pro
            515                 520                 525


    Asp Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Gly Arg Asn Gly
        530                 535                 540


    Gly Lys Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys Asp Lys Arg
    545                 550                 555                 560


    Met Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe Gly Ile
                565                 570                 575
```

```
Leu Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln Met Met Ala
            580                     585                 590

Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu
            595                 600                 605

Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp
    610                 615                 620

Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu
625                 630                 635                     640

Asn Leu Ile Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Asn Thr Arg
            645                 650                 655

Gly Phe Cys Ile Ala Val Ala Val Phe Leu His Tyr Phe Leu Leu Val
            660                 665                 670

Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu
            675                 680                 685

Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys
    690                 695                 700

Ile Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile Val Leu Thr
705                 710                 715                     720

Ile Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys Phe Pro Asn
            725                 730                 735

Gly Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Asn Val Val Phe Tyr
            740                 745                 750

Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser
            755                 760                 765

Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Lys
    770                 775                 780

Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile
785                 790                 795                     800
```

161

```
Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe
            805             810             815

Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala Ile Phe
            820             825             830

Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Ala Ala Lys
            835             840             845

Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu
    850             855             860

Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu
865             870             875             880

Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn Ser Leu
            885             890             895

Gln Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Ser
            900             905             910

Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg
    915             920             925

Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu His Asp
    930             935             940 .

Leu Thr Gly Lys Gln His Met Phe Ser Asp Lys Glu Asp Ser Cys Asn
945             950             955             960

Gly Lys Ser Arg Ile Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu
            965             970             975

His Phe Ile Glu Gln Met
            980
```

<210>   56
<211>   1032
<212>   PRT
<213>   Homo sapiens

<400>   56

```
Arg Thr Cys Arg Cys Ala Gln Ser Leu Leu Pro Leu Phe Ser Glu Leu
```

162

```
1                 5                    10                   15

Pro Val Arg Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg
            20                  25              30

Pro Glu Glu Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys
            35              40              45

Phe His Ala Ile Leu Val Thr Ser Leu Lys Glu Asn Ala Gly Asn Ser
        50              55              60

Ser Leu Leu Ser Pro Ser Ala Glu Ser Ser Leu Val Ser Leu Val Pro
65              70              75                  80

Tyr Ser Asn Gly Thr Pro Asp Ala Ala Ser Glu Val Leu Ser Thr Leu
            85              90                  95

Asn Arg Thr Glu Lys Ser Lys Ile Thr Ile Leu Lys Thr Phe Asn Ala
            100             105             110

Ser Gly Val Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys
        115             120             125

Ser Asp Ser Val Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp Asp
    130             135             140

His Tyr Asn Val Thr Gln Asn Gln Asp Ile Val Asn Ser Thr Phe Ala
145             150             155             160

Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Thr Glu Leu Asn Lys Thr
            165             170             175

Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala Glu
            180             185             190

Ala Gln Asn Thr Leu Asn Cys Thr Phe Thr Val Lys Leu Asn Glu Thr
        195             200             205

Met Asn Val Cys Ala Met Met Val Thr Phe Lys Ser Val Gln Ile Arg
    210             215             220

Pro Met Glu Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser Ser
225             230             235             240
```

163

Pro Glu Glu Leu Glu Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val
            245   250   255

Cys Leu Ala Asp Gln Pro His Gly Pro Pro Val Ser Ser Ser Ser Lys
            260   265   270

Pro Val Pro Val Val Pro Gln Ala Thr Ile Phe Ser His Val Ala Ser
            275   280   285

Asp Phe Ser Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Ser Ser
    290   295   300

Thr Pro Ser Leu Ala Gln Glu Thr Arg Leu Pro Ser Pro Gln Pro Thr
305   310   315   320

Ile Ser Leu Thr Ser Ser Pro Ala Ile Asp Leu Pro Val Gln His Val
            325   330   335

Val Ala Ser Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu Ser
            340   345   350

Pro Val Gln Ser Ser Ile Pro Ser Pro Thr Thr Ala Ala Pro Ser Val
            355   360   365

Pro Glu Lys Val Val Ala Ile Ser Thr Pro Pro Gly Glu Thr Val Val
    370   375   380

Asn Thr Ser Ser Val Pro Asp Leu Glu Ala Gln Val Ser Gln Met Glu
385   390   395   400

Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met
            405   410   415

Val Asn Arg Val Ser Lys Leu Leu His Ser Pro Leu Ala Leu Leu Ala
            420   425   430

Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu Gln
            435   440   445

Leu Asn Phe Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala
    450   455   460

```
Leu Ala Val Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr Phe
465             470             475             480

Ala Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Ala Gln Ala
            485             490             495

Pro Lys Asn Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met Ser
        500             505             510

Asn Leu Pro Ala Ser Glu Val Glu Leu Ala Ser Arg Val Gln Phe Asn
        515             520             525

Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu
    530             535             540

Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr Ile
545             550             555             560

Lys Asn Leu Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn Pro
            565             570             575

Ser Gln Asp Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Asn Arg
            580             585             590

Asn Gly Gly Arg Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys Glu
        595             600             605

Lys Arg Met Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe
    610             615             620

Gly Ile Leu Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln Met
625             630             635             640

Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile
            645             650             655

Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg
            660             665             670

Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu
        675             680             685
```

Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Asn
    690   695   700

Ala Arg Gly Phe Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu
705   710   715   720

Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu
                725   730   735

Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys
            740   745   .750

Phe Cys Ile Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile Val
        755   760   765

Leu Thr Ile Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys Phe
    770   775   780

Pro Asn Gly Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Ser Val Val
785   790   795   800

Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn
            805   810   815

Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys
        820   825   830

Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg
    835   840   845

Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala
850   855   860

Phe Phe Ala Trp Gly Pro Val Asn Leu Thr Phe Met Tyr Leu Phe Ala
865   870   875   880

Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Ala
            885   890   895

Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly
    900   905   910

Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn

```
Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn
    930             935             940

Ser Leu Gln Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu Val
945             950             955             960

Asn Ser Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr
            965             970             975

Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu
        980             985             990

His Asp Leu Thr Gly Lys Gln His Met Phe Ser Asp Lys Glu Asp Ser
        995             1000            1005

Cys Asn Gly Lys Ser Arg Met Ala Leu Arg Arg Thr Ser Lys Arg
    1010            1015            1020

Gly Ser Leu His Phe Ile Glu Gln Met
    1025            1030
```

<210> 57
<211> 1016
<212> PRT
<213> Homo sapiens

<400> 57

```
Arg Thr Cys Arg Cys Ala Gln Ser Leu Leu Pro Leu Phe Ser Glu Leu
1           5               10              15

Pro Val Arg Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg
        20              25              30

Pro Glu Glu Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys
        35              40              45

Phe His Ala Ile Leu Val Thr Ser Leu Lys Glu Asn Ala Gly Asn Ser
    50              55              60

Ser Leu Leu Ser Pro Ser Asp Ala Ala Ser Glu Val Leu Ser Thr Leu
65              70              75              80
```

Asn Arg Thr Glu Lys Ser Lys Ile Thr Ile Leu Lys Thr Phe Asn Ala
                85   90   95

Ser Gly Val Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys
            100   105   110

Ser Asp Ser Val Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp Asp
            115   120   125

His Tyr Asn Val Thr Gln Asn Gln Asp Ile Val Asn Ser Thr Phe Ala
    130   135   140

Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Thr Glu Leu Asn Lys Thr
145   150   155   160

Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala Glu
            165   170   175

Ala Gln Asn Thr Leu Asn Cys Thr Phe Thr Val Lys Leu Asn Glu Thr
            180   185   190

Met Asn Val Cys Ala Met Met Val Thr Phe Lys Ser Val Gln Ile Arg
        195   200   205

Pro Met Glu Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser Ser
    210   215   220

Pro Glu Glu Leu Glu Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val
225   230   235   240

Cys Leu Ala Asp Gln Pro His Gly Pro Pro Val Ser Ser Ser Ser Lys
            245   250   255

Pro Val Pro Val Val Pro Gln Ala Thr Ile Phe Ser His Val Ala Ser
            260   265   270

Asp Phe Ser Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Ser Ser
            275   280   285

Thr Pro Ser Leu Ala Gln Glu Thr Arg Leu Pro Ser Pro Gln Pro Thr
    290   295   300

168

```
Ile Ser Leu Thr Ser Ser Pro Ala Ile Asp Leu Pro Val Gln His Val
305             310             315             320

Val Ala Ser Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu Ser
            325             330             335

Pro Val Gln Ser Ser Ile Pro Ser Pro Thr Thr Ala Ala Pro Ser Val
            340             345             350

Pro Glu Lys Val Val Ala Ile Ser Thr Pro Pro Gly Glu Thr Val Val
        355             360             365

Asn Thr Ser Ser Val Pro Asp Leu Glu Ala Gln Val Ser Gln Met Glu
        370             375             380

Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met
385             390             395             400

Val Asn Arg Val Ser Lys Leu Leu His Ser Pro Leu Ala Leu Leu Ala
            405             410             415

Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu Gln
        420             425             430

Leu Asn Phe Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala
        435             440             445

Leu Ala Val Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr Phe
    450             455             460

Ala Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Ala Gln Ala
465             470             475             480

Pro Lys Asn Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met Ser
            485             490             495

Asn Leu Pro Ala Ser Glu Val Glu Leu Ala Ser Arg Val Gln Phe Asn
        500             505             510

Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu
        515             520             525

Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr Ile
```

```
              530                      535                      540


      Lys Asn Leu Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn Pro
      545             550             555                         560


      Ser Gln Asp Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Asn Arg
                      565             570                         575


      Asn Gly Gly Arg Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys Glu
                  580             585                 590


      Lys Arg Met Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe
              595             600                 605


      Gly Ile Leu Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln Met
          610             615                 620


      Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile
      625             630                 635                     640


      Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg
                      645             650                 655


      Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu
                  660             665                 670


      Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Asn
                  675             680                 685


      Ala Arg Gly Phe Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu
          690             695                 700


      Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu
      705             710                 715                     720


      Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys
                  725             730                 735


      Phe Cys Ile Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile Val
                  740             745                 750


      Leu Thr Ile Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys Phe
                  755             760                 765
```

```
Pro Asn Gly Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Ser Val Val
    770             775             780
```

```
Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn
785             790             795                 800
```

```
Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys
            805             810             815
```

```
Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg
            820             825             830
```

```
Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala
    835             840             845
```

```
Phe Phe Ala Trp Gly Pro Val Asn Leu Thr Phe Met Tyr Leu Phe Ala
    850             855             860
```

```
Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Ala
865             870             875                 880
```

```
Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly
            885             890             895
```

```
Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn
        900             905             910
```

```
Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn
    915             920             925
```

```
Ser Leu Gln Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu Val
    930             935             940
```

```
Asn Ser Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr
945             950             955                 960
```

```
Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu
            965             970             975
```

```
His Asp Leu Thr Gly Lys Gln His Met Phe Ser Asp Lys Glu Asp Ser
        980             985             990
```

```
Cys Asn Gly Lys Ser Arg Met Ala  Leu Arg Arg Thr Ser  Lys Arg Gly
        995             1000              1005

Ser Leu  His Phe Ile Glu Gln  Met
    1010             1015


<210>  58
<211>  997
<212>  PRT
<213>  Homo sapiens

<400>  58

Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg Pro Glu Glu
1               5               10              15


Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys Phe His Ala
        20              25              30


Ile Leu Val Thr Ser Leu Lys Glu Asn Ala Gly Asn Ser Ser Leu Leu
        35              40              45


Ser Pro Ser Asp Ala Ala Ser Glu Val Leu Ser Thr Leu Asn Arg Thr
    50              55              60


Glu Lys Ser Lys Ile Thr Ile Leu Lys Thr Phe Asn Ala Ser Gly Val
65              70              75              80


Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile Cys Ser Asp Ser
            85              90              95


Val Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp Asp His Tyr Asn
            100             105             110


Val Thr Gln Asn Gln Asp Ile Val Asn Ser Thr Phe Ala Gly Val Leu
        115             120             125


Ser Leu Ser Glu Leu Lys Arg Thr Glu Leu Asn Lys Thr Leu Gln Thr
    130             135             140


Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala Glu Ala Gln Asn
145             150             155             160


Thr Leu Asn Cys Thr Phe Thr Val Lys Leu Asn Glu Thr Met Asn Val
```

172

```
                   165                    170                    175

Cys Ala Met Met Val Thr Phe Lys Ser Val Gln Ile Arg Pro Met Glu
            180                 185                 190

Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser Ser Pro Glu Glu
            195                 200                 205

Leu Glu Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile Val Cys Leu Ala
    210                 215                 220

Asp Gln Pro His Gly Pro Pro Val Ser Ser Ser Ser Lys Pro Val Pro
225                 230                 235                 240

Val Val Pro Gln Ala Thr Ile Phe Ser His Val Ala Ser Asp Phe Ser
            245                 250                 255

Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Ser Ser Thr Pro Ser
            260                 265                 270

Leu Ala Gln Glu Thr Arg Leu Pro Ser Pro Gln Pro Thr Ile Ser Leu
            275                 280                 285

Thr Ser Ser Pro Ala Ile Asp Leu Pro Val Gln His Val Val Ala Ser
    290                 295                 300

Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu Ser Pro Val Gln
305                 310                 315                 320

Ser Ser Ile Pro Ser Pro Thr Thr Ala Ala Pro Ser Val Pro Glu Lys
            325                 330                 335

Val Val Ala Ile Ser Thr Pro Pro Gly Glu Thr Val Val Asn Thr Ser
            340                 345                 350

Ser Val Pro Asp Leu Glu Ala Gln Val Ser Gln Met Glu Lys Ala Leu
            355                 360                 365

Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu Met Val Asn Arg
    370                 375                 380

Val Ser Lys Leu Leu His Ser Pro Leu Ala Leu Leu Ala Pro Leu Ala
385                 390                 395                 400
```

173

Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu Gln Leu Asn Phe
            405   410   415

Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu Ala Leu Ala Val
            420   425   430

Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr Phe Ala Ala Gln
        435   440   445

Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Ala Gln Ala Pro Lys Asn
    450   455   460

Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met Ser Asn Leu Pro
465   470   475   480

Ala Ser Glu Val Glu Leu Ala Ser Arg Val Gln Phe Asn Phe Phe Glu
            485   490   495

Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn Leu Ser Leu Ile
            500   505   510

Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr Ile Lys Asn Leu
        515   520   525

Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn Pro Ser Gln Asp
    530   535   540

Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Asn Arg Asn Gly Gly
545   550   555   560

Arg Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys Glu Lys Arg Met
            565   570   575

Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser Phe Gly Ile Leu
            580   585   590

Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln Met Met Ala Leu
        595   600   605

Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser Ile Phe Leu Ser
610   615   620

```
Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile Arg Arg Asp Tyr
625             630             635             640

Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu Leu Leu Leu Asn
            645             650             655

Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr Asn Ala Arg Gly
            660             665             670

Phe Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu Leu Val Ser
        675             680             685

Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu Ala Leu Val
        690             695             700

Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys Phe Cys Ile
705             710             715             720

Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile Val Leu Thr Ile
            725             730             735

Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys Phe Pro Asn Gly
            740             745             750

Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Ser Val Val Phe Tyr Ile
            755             760             765

Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn Val Ser Met
        770             775             780

Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys Lys Lys Gln
785             790             795             800

Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg Ser Ile Ala
            805             810             815

Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala Phe Phe Ala
        820             825             830

Trp Gly Pro Val Asn Leu Thr Phe Met Tyr Leu Phe Ala Ile Phe Asn
        835             840             845
```

```
Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Ala Ala Lys Glu
    850             855             860

Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly Lys Leu Arg
865             870             875             880

Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn Gly Leu Lys
            885             890             895

Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Asn Ser Leu Gln
            900             905             910

Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu Val Asn Ser Asp
        915             920             925

Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr Glu Arg Asn
    930             935             940

Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu His Asp Leu
945             950             955             960

Thr Gly Lys Gln His Met Phe Ser Asp Lys Glu Asp Ser Cys Asn Gly
            965             970             975

Lys Ser Arg Met Ala Leu Arg Arg Thr Ser Lys Arg Gly Ser Leu His
        980             985             990

Phe Ile Glu Gln Met
        995


<210>  59
<211>  1004
<212>  PRT
<213>  Homo sapiens

<400>  59

Arg Thr Cys Arg Cys Ala Gln Ser Leu Leu Pro Leu Phe Ser Glu Leu
1           5               10              15

Pro Val Arg Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg
            20              25              30

Pro Glu Glu Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys
        35              40              45
```

176

Phe His Ala Ile Leu Val Thr Ser Leu Lys Asp Ala Ala Ser Glu Val
    50   55   60

Leu Ser Thr Leu Asn Arg Thr Glu Lys Ser Lys Ile Thr Ile Leu Lys
65   70   75   80

Thr Phe Asn Ala Ser Gly Val Lys Ser Gln Arg Asn Ile Cys Asn Leu
                85   90   95

Ser Ser Ile Cys Ser Asp Ser Val Phe Phe Arg Gly Glu Ile Val Phe
            100   105   110

Gln His Asp Asp His Tyr Asn Val Thr Gln Asn Gln Asp Ile Val Asn
            115   120   125

Ser Thr Phe Ala Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Thr Glu
    130   135   140

Leu Asn Lys Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Val Cys
145   150   155   160

Ala Thr Ala Glu Ala Gln Asn Thr Leu Asn Cys Thr Phe Thr Val Lys
                165   170   175

Leu Asn Glu Thr Met Asn Val Cys Ala Met Met Val Thr Phe Lys Ser
            180   185   190

Val Gln Ile Arg Pro Met Glu Gln Cys Cys Cys Ser Pro Arg Thr Pro
            195   200   205

Cys Pro Ser Ser Pro Glu Glu Leu Glu Lys Leu Gln Cys Asp Leu Gln
    210   215   220

Asp Pro Ile Val Cys Leu Ala Asp Gln Pro His Gly Pro Pro Val Ser
225   230   235   240

Ser Ser Ser Lys Pro Val Pro Val Val Pro Gln Ala Thr Ile Phe Ser
            245   250   255

His Val Ala Ser Asp Phe Ser Leu Ala Glu Pro Leu Asp His Ala Leu
            260   265   270

```
Met Thr Ser Ser Thr Pro Ser Leu Ala Gln Glu Thr Arg Leu Pro Ser
        275             280             285

Pro Gln Pro Thr Ile Ser Leu Thr Ser Ser Pro Ala Ile Asp Leu Pro
    290             295             300

Val Gln His Val Val Ala Ser Ser Ser Leu Pro Gln Thr Asp Leu Ser
305             310             315                     320

His Thr Leu Ser Pro Val Gln Ser Ser Ile Pro Ser Pro Thr Thr Ala
                325             330             335

Ala Pro Ser Val Pro Glu Lys Val Val Ala Ile Ser Thr Pro Pro Gly
            340             345             350

Glu Thr Val Val Asn Thr Ser Ser Val Pro Asp Leu Glu Ala Gln Val
        355             360             365

Ser Gln Met Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu
    370             375             380

Ala Gly Glu Met Val Asn Arg Val Ser Lys Leu Leu His Ser Pro Leu
385             390             395                     400

Ala Leu Leu Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Ala
            405             410             415

Ile Gly Leu Gln Leu Asn Phe Ser Ser Thr Thr Ile Ser Leu Thr Ser
            420             425             430

Pro Ser Leu Ala Leu Ala Val Ile Arg Val Asn Ala Ser Asn Phe Asn
        435             440             445

Thr Thr Thr Phe Ala Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu
    450             455             460

Glu Ala Gln Ala Pro Lys Asn Ser Ile Gly Ala Ile Thr Leu Pro Ser
465             470             475                     480

Ser Leu Met Ser Asn Leu Pro Ala Ser Glu Val Glu Leu Ala Ser Arg
            485             490             495
```

```
Val Gln Phe Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser
            500                 505                 510

Leu Glu Asn Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Thr
            515                 520                 525

Asn Met Thr Ile Lys Asn Leu Thr Arg Asn Val Thr Val Ala Leu Lys
        530                 535                 540

His Ile Asn Pro Ser Gln Asp Asp Leu Thr Val Lys Cys Val Phe Trp
545                     550                 555                 560

Asp Leu Asn Arg Asn Gly Gly Arg Gly Gly Trp Ser Ser Asp Gly Cys
                565             570                 575

Ser Val Lys Glu Lys Arg Met Asn Glu Thr Ile Cys Thr Cys Ser His
            580                 585                 590

Leu Thr Ser Phe Gly Ile Leu Leu Asp Leu Ser Arg Thr Ser Leu Pro
            595                 600                 605

Pro Ser Gln Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly
        610                 615                 620

Leu Ser Ser Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe
625                     630                 635                 640

Glu Lys Ile Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys
                645                 650                 655

Ala Ala Leu Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile
            660                 665                 670

Ala Leu Tyr Asn Ala Arg Gly Phe Cys Ile Ser Val Ala Val Phe Leu
            675                 680                 685

His Tyr Phe Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe
            690                 695                 700

His Met Tyr Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys
705                     710                 715                 720

Tyr Ile Leu Lys Phe Cys Ile Val Gly Trp Gly Ile Pro Ala Val Val
```

179

```
              725                 730                 735

Val Ser Ile Val Leu Thr Ile Ser Pro Asp Asn Tyr Gly Ile Gly Ser
            740             745             750

Tyr Gly Lys Phe Pro Asn Gly Thr Pro Asp Asp Phe Cys Trp Ile Asn
            755             760             765

Ser Ser Val Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile
            770             775             780

Phe Leu Leu Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys
785             790             795             800

Arg Ile Lys Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile
            805             810             815

Gln Asp Leu Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr
            820             825             830

Trp Gly Phe Ala Phe Phe Ala Trp Gly Pro Val Asn Leu Thr Phe Met
            835             840             845

Tyr Leu Phe Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile
850             855             860

Phe Tyr Cys Ala Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr
865             870             875             880

Leu Cys Cys Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys
            885             890             895

Thr Ala Thr Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser
            900             905             910

Ser Ser Ser Asn Ser Leu Gln Ser Ser Cys Asn Ser Thr Asn Ser Thr
            915             920             925

Thr Leu Leu Val Asn Ser Asp Cys Ser Val His Ala Ser Gly Asn Gly
            930             935             940

Asn Ala Ser Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly
945             950             955             960
```

Asp Val Cys Leu His Asp Leu Thr Gly Lys Gln His Met Phe Ser Asp
            965   970   975

Lys Glu Asp Ser Cys Asn Gly Lys Ser Arg Met Ala Leu Arg Arg Thr
            980   985   990

Ser Lys Arg Gly Ser Leu His Phe Ile Glu Gln Met
            995   1000

<210>   60
<211>   985
<212>   PRT
<213>   Homo sapiens

<400>   60

Met Leu Phe Ser Gly Gly Gln Tyr Ser Pro Val Gly Arg Pro Glu Glu
1   5   10   15

Val Leu Leu Ile Tyr Lys Ile Phe Leu Val Ile Ile Cys Phe His Ala
            20   25   30

Ile Leu Val Thr Ser Leu Lys Asp Ala Ala Ser Glu Val Leu Ser Thr
            35   40   45

Leu Asn Arg Thr Glu Lys Ser Lys Ile Thr Ile Leu Lys Thr Phe Asn
    50   55   60

Ala Ser Gly Val Lys Ser Gln Arg Asn Ile Cys Asn Leu Ser Ser Ile
65   70   75   80

Cys Ser Asp Ser Val Phe Phe Arg Gly Glu Ile Val Phe Gln His Asp
            85   90   95

Asp His Tyr Asn Val Thr Gln Asn Gln Asp Ile Val Asn Ser Thr Phe
            100   105   110

Ala Gly Val Leu Ser Leu Ser Glu Leu Lys Arg Thr Glu Leu Asn Lys
            115   120   125

Thr Leu Gln Thr Leu Ser Glu Thr Tyr Phe Ile Val Cys Ala Thr Ala
    130   135   140

181

```
Glu Ala Gln Asn Thr Leu Asn Cys Thr Phe Thr Val Lys Leu Asn Glu
145                 150             155                 160

Thr Met Asn Val Cys Ala Met Met Val Thr Phe Lys Ser Val Gln Ile
                165             170                 175

Arg Pro Met Glu Gln Cys Cys Cys Ser Pro Arg Thr Pro Cys Pro Ser
            180             185             190

Ser Pro Glu Glu Leu Glu Lys Leu Gln Cys Asp Leu Gln Asp Pro Ile
        195             200             205

Val Cys Leu Ala Asp Gln Pro His Gly Pro Pro Val Ser Ser Ser Ser
    210             215             220

Lys Pro Val Pro Val Val Pro Gln Ala Thr Ile Phe Ser His Val Ala
225             230             235                 240

Ser Asp Phe Ser Leu Ala Glu Pro Leu Asp His Ala Leu Met Thr Ser
            245             250             255

Ser Thr Pro Ser Leu Ala Gln Glu Thr Arg Leu Pro Ser Pro Gln Pro
            260             265             270

Thr Ile Ser Leu Thr Ser Ser Pro Ala Ile Asp Leu Pro Val Gln His
        275             280             285

Val Val Ala Ser Ser Ser Leu Pro Gln Thr Asp Leu Ser His Thr Leu
    290             295             300

Ser Pro Val Gln Ser Ser Ile Pro Ser Pro Thr Thr Ala Ala Pro Ser
305             310             315                 320

Val Pro Glu Lys Val Val Ala Ile Ser Thr Pro Pro Gly Glu Thr Val
            325             330             335

Val Asn Thr Ser Ser Val Pro Asp Leu Glu Ala Gln Val Ser Gln Met
            340             345             350

Glu Lys Ala Leu Ser Leu Gly Ser Leu Glu Pro Asn Leu Ala Gly Glu
        355             360             365

Met Val Asn Arg Val Ser Lys Leu Leu His Ser Pro Leu Ala Leu Leu
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                370                        375                        380


Ala Pro Leu Ala Gln Arg Leu Leu Lys Val Val Asp Ala Ile Gly Leu
385             390             395                         400


Gln Leu Asn Phe Ser Ser Thr Thr Ile Ser Leu Thr Ser Pro Ser Leu
                405             410                         415


Ala Leu Ala Val Ile Arg Val Asn Ala Ser Asn Phe Asn Thr Thr Thr
                420             425             430


Phe Ala Ala Gln Asp Pro Ala Asn Leu Gln Val Ser Leu Glu Ala Gln
        435             440             445


Ala Pro Lys Asn Ser Ile Gly Ala Ile Thr Leu Pro Ser Ser Leu Met
    450             455             460


Ser Asn Leu Pro Ala Ser Glu Val Glu Leu Ala Ser Arg Val Gln Phe
465             470             475                         480


Asn Phe Phe Glu Thr Pro Ala Leu Phe Gln Asp Pro Ser Leu Glu Asn
                485             490             495


Leu Ser Leu Ile Ser Tyr Val Ile Ser Ser Ser Val Thr Asn Met Thr
                500             505             510


Ile Lys Asn Leu Thr Arg Asn Val Thr Val Ala Leu Lys His Ile Asn
        515             520             525


Pro Ser Gln Asp Asp Leu Thr Val Lys Cys Val Phe Trp Asp Leu Asn
    530             535             540


Arg Asn Gly Gly Arg Gly Gly Trp Ser Ser Asp Gly Cys Ser Val Lys
545             550             555                         560


Glu Lys Arg Met Asn Glu Thr Ile Cys Thr Cys Ser His Leu Thr Ser
                565             570                         575


Phe Gly Ile Leu Leu Asp Leu Ser Arg Thr Ser Leu Pro Pro Ser Gln
                580             585             590


Met Met Ala Leu Thr Phe Ile Thr Tyr Ile Gly Cys Gly Leu Ser Ser
        595             600             605
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Ile Phe Leu Ser Val Thr Leu Val Thr Tyr Ile Ala Phe Glu Lys Ile
    610   615   620

Arg Arg Asp Tyr Pro Ser Lys Ile Leu Ile Gln Leu Cys Ala Ala Leu
625   630   635   640

Leu Leu Leu Asn Leu Val Phe Leu Leu Asp Ser Trp Ile Ala Leu Tyr
            645   650   655

Asn Ala Arg Gly Phe Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe
            660   665   670

Leu Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr
        675   680   685

Leu Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu
    690   695   700

Lys Phe Cys Ile Val Gly Trp Gly Ile Pro Ala Val Val Val Ser Ile
705   710   715   720

Val Leu Thr Ile Ser Pro Asp Asn Tyr Gly Ile Gly Ser Tyr Gly Lys
            725   730   735

Phe Pro Asn Gly Thr Pro Asp Asp Phe Cys Trp Ile Asn Ser Ser Val
            740   745   750

Val Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu
        755   760   765

Asn Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys
    770   775   780

Lys Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu
785   790   795   800

Arg Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe
            805   810   815

Ala Phe Phe Ala Trp Gly Pro Val Asn Leu Thr Phe Met Tyr Leu Phe
            820   825   830

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Ala Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys
    835                 840                 845

Ala Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys
    850                 855                 860

Gly Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr
865                 870                 875                 880

Asn Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser
                885                 890                 895

Asn Ser Leu Gln Ser Ser Cys Asn Ser Thr Asn Ser Thr Thr Leu Leu
            900                 905                 910

Val Asn Ser Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser
    915                 920                 925

Thr Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys
    930                 935                 940

Leu His Asp Leu Thr Gly Lys Gln His Met Phe Ser Asp Lys Glu Asp
945                 950                 955                 960

Ser Cys Asn Gly Lys Ser Arg Met Ala Leu Arg Arg Thr Ser Lys Arg
                965                 970                 975

Gly Ser Leu His Phe Ile Glu Gln Met
            980                 985
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